AMERICAN VETERINARY REVIEW,

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EDITORIAL.

THANKS AND SUGGESTIONS.—Our suggestion of the probable discontinuance of the publication of the REVIEW, and the accompanying appeal to our delinquent subscribers has not been without effect, but has met with a handsome response, and we avail of the earliest opportunity to tender them our thanks for their appreciation of our position. The appeal has also furnished the occasion to many of our friends to write us letters expressive of their warm appreciation of the work done by the REVIEW. In these expressions we recognize the most satisfactory reward of any we could have received for the efforts we have made, and we cannot allow the present issue to reach our readers without telling them how much we value these proofs of the friendly feelings they have so frankly and kindly conveyed. We desire also to assure them of our increased willingness, and renewed determination to continue our endeavors in behalf of the honor and interests of the profession we serve. But permit us at the same time to ask of our veterinarians something more than the payment of their subscription dues, for though this may help to pay the expenses of publication, it is not sufficient to make the journal all that it ought to be in other respects, viz., interesting as well as instructive.

Our columns being open to all, a question like this occurs:

Ought not advantage to be taken of this freedom of our columns to place on record such interesting facts as are met with in daily practice, and each one of which becomes one of the stones which in their aggregation form the grand edifice of veterinary science which we are all interested in erecting? Let us look at our American publications, and count how many out of the many hundred pages which are necessary to constitute one of our yearly volumes are occupied by "Special Records of Cases," and how many of these might be published if all were to contribute who might do so. Suppose that out of the entire mass of our practicing friends each one should report one case (one only) annually, and who has not in a year, at least, some single cases of unusual or even of but ordinary interest worth describing? How immense would be the amount of material in every branch of our profession which would be thus accumulated, and how greatly the American members of the veterinary profession might be benefitted! Of course we can obtain and copy much information from the numerous journals published in Europe and received in this country, but is it not time for us to prove to the veterinarians on the other side of the Atlantic that there are among American veterinarians as good observers and as careful recorders of their observations as themselves?

The trouble with us is that we are not addicted to literary work. We watch our cases, we carefully observe the varying course of a disease or of an operation; we feel satisfied that in the result our best efforts have been both taxed and rewarded, but there we stop. It is an error and a wrong which we are inflicting upon ourselves and upon our profession. Records of cases, whether successful or not, are obligations due to our brother practitioners, and we should respect our obligations and fulfil the duty they impose as a matter of professional conscience as well as public and private interest. We do not believe that any of the veterinary publications of this continent will decline their hearty co-operation in the performance of this obvious and imperative duty.

ORIGINAL ARTICLES.

THE SCIENTIFIC INVESTIGATIONS OF THE BUREAU OF ANIMAL INDUSTRY.

By Dr. D. E. Salmon.

Considered as an abstract proposition, there is probably no member of the veterinary profession who is not willing to admit the desirability of original scientific research. To the liberal minded members of the profession, the value of such research for the development of science, for the perfection of our practice, and for raising our profession to a higher plane in the eyes of the world must be apparent. It has been generally agreed that the reproach of both the medical and veterinary professions of this country has been the lack of activity and the poverty of results in the field of scientific investigation.

Every veterinarian who takes pride in his profession, and is at the same time a patriotic citizen of the United States, must have a feeling of regret that such a condition of affairs could exist, and he must equally feel an interest in all efforts made to correct it. While we should feel no jealousy of the scientific workers of the Old World, and should welcome every contribution which they make to the fund of existing knowledge, we should certainly rejoice at every effort made in a scientific spirit in this country to conduct researches of the same quality and the same value as are made by the most advanced students in other lands.

This, it appears to me, is a legitimate deduction which may be drawn without fear from our common knowledge of patriotism and professional pride in all times and all countries. More than this, if I mistake not, it is one of the objects for which this Association exists, to promote and encourage scientific research. If I am correct in this, it follows that both the young experimenter, who has taken his first steps in original research, and the more experienced one, whose am-

bition leads him to attack the most difficult problems, should equally meet with welcome and favor when they bring their trophies for the adornment of the organization of which they are members, and which represents the veterinary profession of the country.

In saying this, it is not my purpose to take the ground that a paper read before this Association, or the results of the investigations of members published elsewhere, should not be discussed and criticised. On the contrary, it may be freely admitted that it is one of the most important of our privileges to discuss such papers, and in so doing to bring out points which may have been obscure, or to call attention to conclusions which may be untenable. But the investigator has a right to expect in such discussions that this Association is gratified at every effort, however humble it may be to pierce the mysteries of nature, and that when he brings his results before it or when these are introduced by others, he will be received with courtesy, and that any criticisms will be fair and truthful.

It is vital to the success of this Association that such expectations should not meet with disappointment. Our great need is that we should have more original investigations—that the many peculiar problems which confront us in this country should be solved, and that they should be solved, if possible, by our own members.

These remarks are made by way of introduction to my paper, because this is the first occasion since I have been a member of this organization that it has been necessary for me to defend my work and my character from unjust assaults, made, not in the heat of debate by an individual, but with deliberation by one of our most important committees, and at a meeting from which I was unavoidably absent. The chief points of that report which relate to me I have already discussed in an open letter which you have all had an opportunity to read. (*Jour. Comp. Med.* and *Vet. Arch.* and AM. VET. REVIEW, both for January, 1892). In that, however, I was unable for want of space to treat with any detail the scientific questions involved, and consequently I shall take some of these up at this time.

To remind you of the tone of the report made at the last meeting of this Association, I will quote only two sentences, which are taken from near the end; they read as follows:

"Having taken the investigation of swine diseases as a fair sample of this Bureau's scientific labors, are we to be expected to place any dependence upon the accuracy of the statements emanating from its officers concerning such work, especially when they conflict with the results obtained by men like Paquin and Billings, unless the work of the former is confirmed by experiments conducted by independent and unprejudiced observers of recognized ability?

"How can we as a profession feel anything but disgraced when we think of the opinions which must be held in Koch's laboratory, the greatest bacteriological laboratory in the world, concerning our Bureau of Animal Industry, and its scientific work?"

Is there any one here who can find in those two questions any favorable appreciation of the scientific investigations of the Bureau of Animal Industry, or any encouragement for the scientists of that Bureau, several of whom are members of this Association, to continue their labors in this their chosen field? Quite the contrary. The entire field of scientific investigation in this country can be explored without finding an example of such rank injustice or of such uncalled-for defamation. It is for this reason that I propose to take up the matter at this time and show how accurate have been the reports of the Bureau, and how untenable the positions of those who assailed them.

Billings has published an abstract of the paper of Frosch, referred to so much in Peters' report, under the title of "Billings' Investigations Vindicated," and Peters endeavors to give the impression that Frosch's report endorsed the various positions which Billings has assumed, and shows that the Bureau reports have been incorrect and unreliable. It is true that he does not undertake to prove this by a citation of the facts, a course which would, no doubt, have been inconveniently troublesome, but his whole argument gives this impression, as is sufficiently shown by the short quotation which I have made.

Now, what are the facts about this subject? In the first report of the Bureau, that containing the work of 1884, the cause of swine plague was spoken of and figured in liquid cultures as a dumb-bell micrococcus. In recent years I have laid no stress on that early work, because it was done soon after I went to Washington, when bacteriology in this country was in its infancy, and when the Bureau had neither the instruments, the laboratory facilities, nor the assistance which we now know to be essential for such investigations. It is also well known that I had many other duties at that time, such as the organization of the Bureau, and the investigation and control of an outbreak of pleuro-pneumonia in the Western States, which caused several long absences from Washington, one of which was of more than three months' duration. This is no reason why my scientific conclusions at that period should be received on any less evidence than is required from other people, but it is an explanation as to why the germ then figured was not studied under different conditions of culture, and in its effects upon different animals so that its identification by other investigators would be easy and certain.

It is evident of course in the light of to-day that we cannot claim to have established the fact that the micrococcus of 1884 was a specific pathogenic germ because we did not give the means for the subsequent identification of this germ either by other investigators or ourselves. It is significant, however, that a disease of swine has since been studied in Germany and in the United States the bacteria of which grow in liquid cultures as did the germ figured in the Report of 1884. There is only one discrepancy, and that was explained long ago and before any one else had discovered it. It was stated in that report that the micrococcus liquefied gelatine. The error was owing to my cultures being then made in liquid media after the Pasteur method, as on account of lack of assistance and laboratory facilities the gelatine method was impracticable. Because of changes in the laboratory and my long absence my cultures became shifted about and in some cases the labels misplaced. On my return it be-

came necessary to hurriedly prepare my report, and a culture supposed to be the same as that previously photographed was plated to determine its effect on gelatine. The gelatine on this plate was liquefied, and on the strength of this one experiment the statement above referred to was made in the report. The error was afterwards discovered and corrected by me, but it is still referred to by unscrupulous writers as a reason why the micrococus of 1884 could not be identical with the micrococcus described in 1886 and in subsequent reports.

A discussion of this question is of little importance at the present day, particularly when the one who made the investigations in question has since had the whole field worked over with all the appliances of modern science and has unreservedly published the results. These old reports which were made before exact bacteriological methods were introduced into this country, are only referred to now by those who wish to discredit the work of the Bureau; but they forget that if it is impossible at this time to prove the conclusion that the micrococcus of 1884 was identical with that of 1886, it is equally impossible for them to prove that the two were not identical.

What is well-known to all of these writers is that under my direction the laboratory facilities of the Bureau were rapidly increased, that the work of experimentation was divided, that proper instruments were obtained, and that the results from that time to the present have been equal in accuracy, detail and importance with those obtained in any other laboratory in the world during the same period. In the report for 1885 the microbe of hog cholera was accurately described and you may ransack the literature of the world for any description made previous to that time by which you can identify that germ.

In the report for 1886 the germ of the American swine plague was described and the differences between this and the hog cholera germ were plainly indicated. In the report for 1885 the disease investigated was referred to as swine plague, but before the following report appeared we received the report of Schütz on *Schweineseuche* and also found that we

had a disease of the same nature in the United States. With the two diseases before us we decided to call the one swine-plague which appeared to be identical with the *Schweineseuche* of Germany. Since *Schweineseuche* can only be translated as *swine plague* this course appeared to be necessary to avoid confusion; and if this example had been followed by others who wrote afterwards, the confusion which is now found in the nomenclature would not exist.

The impression which Billings and Peters attempt to give is that the investigations of Frosch sustain the claims of Billings and refute the conclusions of the Bureau of Animal Industry. This impression is absolutely false as can be easily proved. It is true that Frosch was led by reading Billings' misleading, and, in many respects, incorrect reports, to express opinions uncomplimentary to the Bureau and discreditable to himself on subjects of which he knew no more than any other reader of the reports; but so far as his scientific investigations go, and that is all the evidence offered by him which is worth anything, he sustains the reports of the Bureau in every important respect.

After what has been read in your presence and published by our journals, I suppose the most of you are surprised that I can make such a statement. If I make it I am prepared to prove it, and I feel sure that no man can contest the evidence which I offer.

What was the first position taken by Billings in regard to the germ which was described by the Bureau in 1885? We will take his report published in 1888 as authority, as he then had given two years to the investigation, and he certainly cannot therefore accuse us of using his prematurely expressed opinions in making this argument. After two years of study and investigation, with the advantage of having our reports for 1885 and 1886 in his possession, he deliberately states that no such germ as our hog cholera germ was found by him, that such a germ has no existence, and that our germ was a fabrication or, to use his own words, "a forgery."

Referring to the Bureau experiments of 1885 he says: "Furthermore, their value is absolutely nullified for the sim-

ple reason that no such germ exists in connection with swine plague as that described above." (University of Nebraska, Second Report from the Patho-Biological Laboratory, 1888, p. 54.)

Again he says: "By thus ignoring them, he silently admits they were not 'un' but 'well-founded statements'; and hence as he has not, and cannot, prove them to have been, or be, erroneous, and those which he alludes to of 1885 are of the same nature, I emphatically declare that all Salmon's assertions with regard to the specific microscopical appearances of any true and specific pathogenic micro-organism in connection with hog cholera to be one continued series of 'unfounded statements' down to the issue of his report of 1886." (Loc. cit. p. 68.)

Once more he says: "I positively assert that Salmon's assertion of a distinct germ for the disease which he now calls hog cholera is erroneous, and that the description of that object is a forgery; that it does not exist or occur in any form of the American swine plague, and that neither Salmon nor any one else can demonstrate the presence of that object in the tissues or blood of any hog that has died of swine plague in any part of this country, if the examination is made before cadaveric changes have taken place.

"That the object described by Salmon as the germ of the hog cholera cannot be cultivated from the tissues of any animal that has died of hog cholera or swine plague." (L. c. p. 74.)

He returns to this subject as follows:

"That this substance does not represent a spore condition or have any relation to spores, is, to my mind, entirely beyond all question, as I have searched most diligently for spores in old and fresh cultures, and others made at all kinds of temperatures within the biological limits of these organisms, my search being inspired by the description of what I pronounce a forgery, of a germ (which represents a spore), as the cause of swine plague, by Mr. Salmon in 1885, and again in 1886, as the cause of an assumed porcine pest, to which Mr. Salmon now gives the name of 'hog cholera.' This Salmon ob-

ject does not exist, never has existed, and never will have any etiological connection with the American swine plague, as has been conclusively demonstrated in this report." (L. c. p. 111.)

In his *post-mortem* notes he says:

"Though the lesions here described must and will completely fill Mr. Salmon's picture of his 'hog cholera,' described in his report of 1886, but in this, as in every other case, Mr. Salmon's specific 'hog cholera microbe' was missed, and 'it ever will be missed" in the American swine plague, no matter who seeks it, or how much time they spend in the hunt." (L. c. p. 136.)

In another *post-mortem* note he says parenthetically:

"It does not seem as if any one could have seen more extensive lesions in the large intestine, which Mr. Salmon says are characteristic of his 'hog cholera,' yet his manufactured germ of 'hog cholera' never had any connection with the lesions in this hog." (L. c. p. 163.)

At the conclusion of his *post-mortem* notes he added:

"After several hours spent at this useless job, we were unable to find any other micro-organism than that invariably found in every case of swine plague we have investigated, and which has been described as a 'belted ovoid organism which colors at its pole ends,' and which bears no resemblance to the Washingtonian-Bureaucratic nondescript." (L. c. p. 164.)

I have already made enough quotations to demonstrate Billings' position on this question in 1888, when his report was written; but it is my object to show that this was the main idea of that report—the conclusion upon which the whole structure was built. As so much depends upon this one fact I trust that you will bear with me while I demonstrate that from the beginning to the end of the four hundred pages these assertions are repeated as the corner-stone of the whole argument.

Describing an autopsy made by himself and Dr. Roberts, of Creighton, Neb., he adds:

"The above case is of special interest, and is only intro-

duced here because if there ever was a case of swine plague which absolutely corresponded in every particular to Mr. Salmon's 'hog cholera,' this one did. Hence the most exact search was made in seeking micro-organisms, but in the blood, in the spleen, in the liver, in the lymph-glands, both Dr. Roberts or myself could not find any other organism than that described by me in this report as the only germ of swine plague. Cultures were made and the same organism developed. Dr. Roberts being here with me, and interested in this work, as well as being a Regent of the University, he was doubly interested in endeavoring to find anything like the organism described by Mr. Salmon as occurring, according to him, in just such cases. Here was no room to say with Salmon, the lungs being affected, the germ of swine plague and that of hog cholora may both be present. After spending more than an hour in examining and re-examining the fresh organs, all of which were kept carefully covered, except for the moment necessary to clip out a small piece of tissue, we gave up the search, finding nothing but the one organism, and nothing resembling in any way the one described by Mr. Salmon in 1885 as the cause of swine plague, which had no polar staining whatever, and in 1886 as the cause of his 'hog cholera.'

"Such testimony as this should be conclusive. A mistake is absolutely impossible under the circumstances. This result simply corresponds with over five hundred such experiences." (L. c. p. 259.)

Finally, referring to my experiments in producing immunity in pigeons with the chemical products developed during the growth of the hog cholera bacterium, he writes:

"Hueppe seems to be absolutely unaware of the fact that the experiments he refers to were published in Mr. Salmon's report of 1885, when he said that the peculiar organism, which he then called the 'new microbe of swine plague,' was entirely different from that of Schütz. Hueppe is also unaware of the fact that that same organism suddenly became the cause of Mr. Salmon's 'hog cholera' in 1886 as he is that that same organism has no existence in the American swine plague." (L. c. p. 394.)

Two pages further on he says:

"With this, apparently, positive evidence in his hands, why did not Mr. Salmon proceed with such valuable work in 1886 and 1887, not to speak of the present year?

"Why does he not mention any further experiments of the same kind in his report of 1886, or his later publications?

"What is he employed for but to do this thing?

"The true answer is easy to discover!

"*Because Mr. Salmon is fully aware that no such organism as his swine plague 'new microbe' of* 1885, *or his 'hog cholera' of* 1886, '87 *and* '88, *exists as an etiological moment in swine plague.*" (L. c. p. 396.)

These extracts are certainly sufficient to demonstrate Billings conclusion as to the germ of hog cholera up to the time his report was written in 1888.

Was he right or wrong in his conclusion that no such germ as the hog cholera microbe existed, and that it had never been found and never would be found in the American swine disease? Is there any one in this Association, or, indeed, any one in the country, who believes that Billings was right and the Bureau wrong on this fundamental question? You all know better. You know that all who have since investigated the question have acknowledged the reality of the hog cholera microbe and its etiological relation to that disease. Even Billings himself has since adopted it, and in the September (1892) number of the *Journal of Comparative Medicine* he gives a figure of it, which does not correspond in the least with the figures in his report, or with his description of it as an ovoid, belted germ" morphologically identical with the microbe of *Schweineseuche.*

All the statements of his which I have quoted were, therefore, radically wrong so far as they denied the existence and the etiological relation of the hog cholera germ. Were they wrong as to the germ which he found at that time? This question we will consider later, but it should be remarked here that Billings claims to be a bacteriologist, and that consequently he should be able to discriminate between two such radically different germs, especially after the points of differ-

ence have been so carefully pointed out as they were in the report of the Bureau for 1886.

Under such circumstances the investigator's own conclusion must be taken, when it is given in such positive language, and no one has a right to go behind it and claim that the investigator meant something different from what he wrote. The investigator has the germs under his own eyes, and if he cannot tell what germ he has how ridiculous it would be for some one else, who has never seen the germ, to attempt to decide from the written description of the man who himself cannot tell!

In the face of these facts, how could the Committee on Intelligence and Education pretend in their report, at the Washington meeting, that the discovery of the identity of the Billings swine plague germ (as now accepted by him) with the hog cholera germ of the Bureau, sustained the claims of Billings and showed the Bureau reports to be unreliable? How could the committee record its belief that his work was "really correct and valuable," and that ours was a disgrace to the profession? How absurd this is when it is apparent that the man, who in his report reiterated again and again his conclusion that no such germ existed, is only too glad to give the impression now that this was the germ he was working with from the first.

How could the committee, with such undisguised exultation, tell us that "Dr. Billings boldly announces that he found his germ of swine plague in July, 1886, among the first pigs that he examined in Nebraska, which had died of the disease." Did the committee stop to inquire what germ he found at that time? Did they take into account his many denials of the existence of any germ which had the least resemblance to the hog cholera germ of the Bureau reports? If so, how can they come before this meeting and try to give the impression that the germ which Billings first found in Nebraska was identical with the hog cholera germ of the Bureau? These are serious questions, and relating as they do to an attack upon the reputation of individual members of this Association, as well as upon that of the Bureau in which veterinarians are

especially interested, we have a right to demand that they be answered.

(*To be continued.*)

REPORT OF COMMITTEE ON INTELLIGENCE AND EDUCATION.

AUSTIN PETERS, M.R.C.V.S., Chairman.

"Do not repine, my friends," said Mr. Pecksniff, tenderly, "do not weep for me. It is chronic."

These remarks of Mr. Pecksniff, Mr. President and gentlemen, seem to apply to me upon the present occasion; not that I am in the condition that Mr. Pecksniff was in when he uttered them, but it seems as though my chairmanship of this committee were a chronic complaint, when I rise to read its report for the third consecutive year. Two years ago I felt like a boarding-house keeper who had a nice roast for her boarders. A year ago by taking the remnants of the roast and adding a few turnips, carrots and onions, I felt that I could prepare a tolerably palatable stew, but now I find that I have but a few gristly scraps left with which to compound a hash, and if there are a few bare bones left over I fear that there is so little upon them that a soup made from them would be very thin and watery; therefore I pray you that I may hereafter be relieved from the arduous duties of chairman of the Committee on Intelligence and Education, and a successor appointed with a fresh fund of facts and ideas with which to regale you.

In preparing this report I shall divide it as I did the one last year, first considering the subject of veterinary education; and after concluding what I have to say upon this question, I will briefly call your attention to a few other matters that may prove of general interest to you.

In my communication of last year I called your attention to the fact that while some of our veterinary schools gave a three years' graded course, the curricula of others comprised but two winter sessions of six months, or less, each; but that in my opinion the advantages of the longer period of study

were to a great extent counterbalanced in many instances by the short course institutions having a greater nnmber of able veterinarians upon their faculties, with wider experience as teachers, and that about as much instruction as regards the number of lectures and clinics is crowded into the two winter terms as is spread out over three years in the longer-course institutions. The advantages possessed by the longer period of study is that the student retains the knowledge he acquires slowly much better than that which is crammed into him in a short space of time, and that he assimilates the information that he becomes possessed of gradually much more satisfactorily than that which he receives in a marvelously short while.

Another advantage of the longer course of tuition is that there are certain branches of medical study that cannot be pursued properly unless the pupil has the benefit of laboratory facilities, where he can demonstrate facts for himself, or prepare specimens with his own hands. A chemistry course, for example, which consists of a number of lectures comprising a dazzling and remarkable series of experiments from beginning to end, may be very entertaining and amusing, but is of little benefit as a means of practical instruction compared to laboratory work where the student can become familiar with common chemicals, their behavior under ordinary conditions, and a few simple tests for their detection. The same is true of histology, pathological histology and bacteriology. Lectures are not satisfactory in comparison with work in the laboratory where the future veterinarian can learn to cut, stain and mount sections, stain and cultivate germs, and make microscopical examinations of his work for himself. The advantages possessed by the agricultural colleges that give veterinary degrees are in their facilities for laboratory work: and while they may be weak in the means for imparting actual medical and veterinary knowledge, yet they are strong in the scientific branches of instruction; therefore if their graduates had to hustle for an existence in competition with graduates of regular veterinary schools, they might starve to death, yet we see them fitted to enter the field of original

cientific research and acquit themselves with a fair degree of credit, while the regular veterinary graduate has very little conception of how to proceed in this class of work.

At the same time I believe that the veterinary scientist should be a graduate of a school for the exclusive study of veterinary medicine; that he should first be instructed how to rustle for a living as an every-day practitioner, and that then, if his inclination lead his footsteps toward the paths of science, he should take a post-graduate course to fit himself for this work.

Instruction at an agricultural college should simply be looked upon as an excellent preparatory training for a veterinary education, and the knowledge of chemistry, care and breeding of animals, physics or microscopy as a great advantage in his future work, but the only degree to be given by these institutions should be B.S. or B.A.S., and should not have any more to do with his acquiring a veterinary degree than the title of A.B., A.M., or, Ph.D., and it seems to me that granting veterinary degrees by colleges of agriculture should not be encouraged by us, and that these institutions are diverging from their proper channels when they do so.

In my last year's report I dwelt at some length on the importance of a higher standard of education for matriculation in our veterinary schools, and that it was perhaps as important, or possibly more important, to first secure a reform here before taking action upon the length of the period of study after entering. In most of our veterinary institutions any pretence of a matriculation examination is a farce, and even in those where they require anything like a high standard of education for admission it is doubtful if it is lived up to, and if it were it would be found that they would have very few students in attendance.

You will doubtless remember that at the Washington meeting when this portion of the report of the Committee on Intelligence and Education came up for discussion, the members present thought that it was of much greater moment to attempt to secure a three years' course in our veterinary colleges, and that the matriculation standard would advance as

the requirements of the schools advanced, and that in the future our Association ought only to recognize the graduates of such institutions as require a three years' graded period of study.

The result of these deliberations was that the following amendment to our Constitution was offered at the Washington meeting to be acted upon during our meeting here:

"ARTICLE 1.—Any applicant for membership shall submit his name upon one of the Association's application blanks, duly vouched for by one or more members of the Association, or by the resident State Secretary for his respective State. He shall be a graduate of a regularly organized veterinary school which shall have a curriculum of at least three years, of six months each, especially devoted to the study of veterinary science, and whose corps of instructors shall contain at least four veterinarians. If of a medical school a similar curriculum as to time shall prevail."

This alteration to go into effect after the annual meeting of 1892. It shall not be retroactive, nor apply to applicants who were college matriculants prior to its passage.

If it be your pleasure, gentlemen, to accept this amendment to the Constitution, I have only to add my hearty Amen!

Some friends of the profession are optimistic enough to hope that some day we may have a national board of examiners to examine the students graduating from all the schools of veterinary medicine in the United States, those passing to be members of the Veterinary College of America, on a plan similar to that governing the M.R.C.V.S. of England to-day. But I fear that if this scheme is even advisable its adoption is a long way off, and meantime I think that the United States Veterinary Medical Association is now in a position to act to a certain extent as censor of veterinary medical education upon this continent. We can certainly put ourselves on record as being in favor of a three years' graded course of study, at least, (with no objection to a longer one) and a matriculation examination sufficient to show that the student has an education that will enable him to

profit by the instruction he is to receive. We should only admit to membership men who graduate from schools that meet with our approval, and in this way we can perpetuate this Association as a body of enlightened, learned men, ready to do all in their power for the advancement and welfare of veterinary science, and always striving for the improvement and well being of a humane and useful profession.

These requirements are now met by the Veterinary Departments of Magill University, the University of Pennsylvania and Harvard University; and the American Veterinary College is about to inaugurate a three years' course. Its faculty have for some time realized the importance of the change, but until recently the facilities of the school were insufficient to meet this demand. On the other hand, we have an ever-increasing number of the veterinary colleges pure and simple, with two winter sessions of six months each, and also the veterinary departments of agricultural colleges and State universities which, while they meet with our views as regards length of course and matriculation requirements, are deficient in the number of their veterinary necessities and the clinical advantages that they are enabled to furnish for their students, and in some instances the means for the acquirement of a knowledge of anatomy by work in the dissecting-room is woefully lacking.

The following is a list of the veterinary colleges not already mentioned that are exclusively such. I do not know whether it is complete or not, but any additions or corrections I shall be glad to receive. In Canada there are, besides the Veterinary Department of Magill University, three schools, two of which are French, l'Ecole Veterinaire de Quebec, and l'Ecole Veterinaire Française de Montreal, a branch of Laval University; the other institution is the Ontario Veterinary College of Toronto.

In the United States there is the New York College of Veterinary Surgeons, at New York, the Chicago Veterinary College; the Veterinary Department of the Detroit College of Medicine; the Ohio Veterinary College, at Cincinnati; the Iowa Veterinary College, at Des Moines; and the Kansas City Veterinary College.

The following universities grant veterinary degrees: The Veterinary Department of the University of Minnesota; the Iowa State Agricultural College; the Veterinary Department of the Ohio State University; Cornell University; and, possibly, others of which I have no information.

And to crown all, while glancing through an agricultural paper the other day, I happened to notice the following advertisement:

FARMERS' BOYS, STOCKMEN,

FARRIERS, JOCKEYS.

You can become skillful horse and cattle doctors, complete and proficient veterinarians, without losing time from your regular employment, by our system of home study. Our course will enable you to earn large fees as veterinary surgeons, or save large sums by treating your own horses or stock. Horsemen, this system will put money in your pockets. For further information and a valuable book, send 25 cents (postage stamps) to The American Correspondence School of the Arts and Sciences, Chicago. Mention this paper.

I at once enclosed twenty-five cents in postage stamps to the American Correspondence School of the Arts and Sciences, and in due time received a prospectus of its veterinary department, which I have here for your inspection. If you wish one of these interesting documents I have no doubt that more are forthcoming upon receipt of the requisite stamps.

This school, upon the payment of $25.00 by the matriculant, furnishes a lecture a month for home study, and also forward the required text-books upon receiving their price; the books for the first term being: "McFadean's" Anatomy, Gould's Medical Dictionary, Fleming's Veterinary Obstetrics, and Gresswell's Veterinary Pharmacopœia. The course covers two years, but what text-books are needed for the second year the prospectus does not state. Written examinations are held from time to time. The first year's course can be taken independently of the second year's, but the advanced one cannot be taken first, nor any student take both in one year. Club rates are offered three or more students living near each other, if desired. Another advantage which it possesses is that matriculants can enter at any time. The size and number of "large fees" that the certificate-holders of this institution will be enabled to earn as "veterinary surgeons,"

and the amount of "money that it will put in horsemen's pockets," I leave to your imagination, knowing, as most of you do, the length of time it requires for thoroughly educated veterinarians to build up large and lucrative practices.

This condition of affairs is certainly interesting, and calls for the most careful consideration and investigation upon our part.

If the proposed amendment to the Constitution of this Association be adopted, it will be necessary to add a committee on veterinary schools to the standing committees, whose duty it shall be to keep posted upon all matters pertaining to these institutions, such as the establishment of new colleges, the period of study, requirements for admission and graduation, the number and standing of the members of the faculty, and all similar information; or if it seems wiser to do so the Committee on Intelligence and Education might perform this duty. It should also devolve upon the committee having this work in hand to correspond with the proper officials in foreign countries having charge of the management of their respective veterinary schools, keeping them informed upon the standing of our different veterinary colleges, and securing for each the recognition it deserves.

For example, a graduate of an American veterinary college having a two years' course could formerly enter an English veterinary school and obtain the degree of M.R.C.V.S. in a year, while a graduate of a three years' school here was obliged to do the same. This is obviously unfair to the man who has taken the longer course, and it is a condition of affairs that we should do our share toward remedying; and we should do all in our power toward securing every facility for our young graduate to pursue his studies in any foreign veterinary school that he may desire to enter, with a due recognition of the course of study that he may have followed at home.

If, however, all the veterinary schools in the United States adopted a three years' graded course, with a high standard of matriculation examination, I do not think the ideal will have been reached, for I believe that in time, as this country

becomes richer, and the veterinary profession older and more advanced, colleges covering a term of four or five years may be established, and many studies of importance that have heretofore been neglected will receive the attention they deserve.

Then such branches as zoology, zootechny, botany, toxicology, bacteriology, hygiene and the like will receive a wider and more thorough consideration than at present. Hygiene is, I think, a very important matter, the veterinarian at present having given but little attention to the construction of stables, ventilation, drainage, the value of fresh air, pure water, proper clothing, careful grooming, and similar questions pertaining to the comfort and health of his charges.

Horseshoeing is another subject that does not receive the attention which it ought to, and instruction should be given in it.

Why could not a series of lessons in horseshoeing be given in some of our veterinary schools for blacksmiths, a certificate to be given to those who passed in it? If those taking such instruction could receive a little more for shoeing horses than the ordinary blacksmith it might encourage bright and intelligent young mechanics to adopt this trade, and thus give us an improvement upon the extremely ignorant class of men who now follow the business, and also save much equine suffering. I fear, however, that in such an event it might reduce the incomes of some of us! Such a course as I propose to include the anatomy, physiology and pathology of the horse's limbs and foot, together with proper methods of shoeing, both in health and disease.

Sanitary science and police will then receive a greater amount of attention from the veterinarian's point of view, and in time his value in connection with boards of health, the inspection of slaughter-houses, provisions and dairies, will be more fully realized.

The great obstacle at present to our obtaining from veterinary schools more severe matriculation rules, longer period of study, more thorough education, more difficult graduation, is the fact that most of them are private undertakings, where

personal and pecuniary interests will sometimes overwhelm the most worthy professional and best-intentioned individual. Not until our leading veterinary institutions have ample endowment funds, either as private bequests or public appropriations, will they be enabled to in any degree approach perfection.

Another means of elevating the profession that deserves our consideration is by means of ethics. I would call your attention to a paper read upon this subject by Dr. A. Liautard, before the Massachusetts Veterinary Association, last May, and published in the *American Veterinary Review* for June, in which the writer treats the question in a very able and instructive manner, and which I would call to the notice of all who may be interested in the subject. I will, therefore, dismiss this matter in as few words as possible.

It is not to the ethical behavior of our recent graduates that we would call attention, but to the professional morals of the older members of our calling, more particularly that of instructors in veterinary colleges, to whom the youthful practitioner or student is looking for example, and in whose footsteps he is likely to follow.

It is our teachers who are largely responsible for the ethical feeling of the recent members of the profession, and it is their influence and training which have much to do in deciding the professional morals of the young man, whether he looks upon his calling as one of the "learned professions," and feels the proper *esprit de corps* in its well being when launching upon it as his life work; on the other hand solicits patronage, seeks contract work at low rates, and even goes so far as to claim that the calling of a veterinarian is a business, and not a profession, and that a man to succeed in it in the race for dollars must resort to sharp business tactics in order to get ahead. In speaking of the ethical example set by the instructors in our veterinary schools, I do not refer to veterinarians alone, but would include members of what we sometimes style our "sister profession," who are upon the teaching force of all these institutions, and in some of them, at least, if not more, take an interest in and encourage

proceedings that they would be the first to cry out against, and most loudly denounce, in members of their own profession, evidently considering veterinary so much lower than medicine, that it has no need of any code of ethics at all. Some of these gentlemen certainly have a very curiously perverted moral vision, to say the least, and where it exists it should be corrected.

Last year, in this report, I made some criticism of the Bureau of Animal Industry, and since then I have had no reason for changing my mind, or retracting anything I said at that time, but the chief of the Bureau has taken the matter as a personal attack. I therefore prefer to make no remarks about it on this occasion, as anything that savors of a personal quarrel has no place in a report of this kind.

Another question that has caused a great deal of discussion lately, and one which I would like to call to your notice, hoping that some day it may be satisfactorily settled, is that of actinomycosis. Is actinomycosis an extremely contagious disease of cattle spreading with terrible rapidity among our herds, and readily communicated through the beef and dairy products to man, causing countless deaths among the human family, even though the lesions in the offending bovines are purely local, or is it not?

If these various communicable diseases were half as dangerous as we know they are, it would be a wonder that one of us was alive to tell the tale. Meantime, judging from what we see of the two diseases, both in man and cattle, I believe that tuberculosis is vastly more dangerous than actinomycosis, and that it is our duty as sanitarians to do all in our power to abate its ravages, both among our herds and in our own race, and while we should neglect neither malady, tuberculosis is much more urgent and demands our immediate attention.

Another matter which always interests us at these meetings is the establishment of our United States Army Veterinary Corps. We have, as usual, a special committee to inform us upon the subject, and I hope its report may be more encouraging than in the past.

In conclusion, gentlemen, I wish to thank my colleagues

upon this committee for the able assistance they have rendered me; and I also wish to take this opportunity of expressing my obligations to my friend and preceptor, Dr. Liautard, for the kindly and useful advice and information he has given me, and to which this report is greatly indebted for much of the value it may have.

Next year we shall have a grand international veterinary congress in Chicago, at the time of the nation's celebration of the four hundredth anniversary of the discovery of America by Christopher Columbus. What is a more fitting sentence for me to close with than the words of the immortal Lincoln? Let us meet there, "With malice toward none, with charity for all, with firmness in the right, as God gives us to see the right; let us strive on to finish the work we are in."

NOTES ON CERTAIN ABNORMALITIES IN ANIMALS.

By D. S. Kellicott, Columbus, O.

From time to time abnormalities have been observed in animals dissected in the zoological laboratory of the Ohio State University. During the last academic year several of unusual interest occurred, and the three briefly described below, it is thought, may have sufficient value to warrant record in a technical journal.

I. The first case that I will mention was one of arrested sexual development in a sheep, giving a malformed animal, sometimes called a "hermaphrodite." In February, Mr. H. E. Rutan of Mechanicsburg, O., informed me that in his flock was a sheep which he thought was a ewe, but that it did not act like one. He kindly granted a request for the privilege of studying it, and the results were as follows:

The sheep was about a year old, weighed one hundred pounds, appeared to be in perfect health, and had in general the appearance of a ewe. There was no scrotum, but the homologue, the *labia majora* were well developed, normal in position and externally covered with short hair. The testicles could be felt in the inguinal region. On removing the

skin a slender muscle was found lying along the *linea alba*, from the perineal region to the umbilicus, where it bifurcated, the two parts running forward to be attached to the fascia of the pectoral muscles. The muscle appears to represent the retractor and protractor muscles of ruminants. The two slit-like inguinal openings, situated cephalad of Poupart's ligament, were about two inches long and through the posterior part of which hung the testicles; these had long cremaster muscles, were relatively well supplied with blood, and were normal except in size. The mammary arteries accompanied these muscles through the inguinal openings, and were distributed in the substance of the small mammary glands.

The urinary bladder appeared normal, but the urethra did not traverse a penis, being in this respect like that of the female. Its external opening was situated at the upper angle of the vulva, and the entire canal was only three inches in length. The urethra was in the position of the vagina of the female and surrounded at its middle by a well developed *musculus accelerator urinæ*.

On the dorsal aspect of the bladder, the seminal vesicles were found, each about two and one-half inches in length, and one-fifth inch in diameter; each was in communication with its corresponding testicle by a well developed *vas deferens*. The prostate gland was present bound to the wall of the urethra.

Microscopical examination was made, but it failed to reveal spermatozoa in the seminal vesicles.

The most profound malformation occurred in the penis. Immediately below, not surrounding, the urethra was the *corpus spongiosum;* it ended in a *glans* which projected about half an inch from the vulva, appearing like a *clitoris*. (Since the organ was not traversed by the urethra, it might properly be called a *clitoris*, but as the primary sexual characters were distinctly those of a male, I will call it *glans penis*). The total length of the *corpus spongiosum* was, perhaps, five inches, but as it was folded several times it appeared much shorter. Its origin was difficult to make out, but appeared to connect with the accelerator urinæ. Two very small erector

muscles attached the *C. spongiosum* to the tuberosities of the ischia. On either side of the *C. spongiosum* was a shapeless mass, the structure of which seemed to indicate the *corpus cavernosum*. Externally below the *glans*, there was a transverse fold, or partition of mucous membrane forming a sac open above. The fold was laterally attached to the *labia majora*, and really appeared to represent the *preputium*.

No trace of ovaries or uterus was found, so it seems safe to conclude that the essential sexual regions were male and the external female.

NOTE.—The dissections were made by the Class in Comparative Anatomy; the notes were made by Mr. J. H. McGregor.

II. A case of extra uterine pregnancy in a cat. The animal was of normal size, apparently in good health and exhibited the usual cheerfulness. The cyst was found on opening the abdominal cavity lying free in the caudal part on the left side. It was somewhat uniform, its dimensions were ¾x1x2 inches, and contained two kittens; the color was dark livid and the whole was inclosed by a delicate, hyaline membrane.

The ovaries and the right horn of the uterus were normal in appearance; the left horn was greatly reduced, appearing as a slender filament only. This seems to indicate that the fœtuses escaped by rupture, and that subsequent occulation and atrophy had taken place. No trace of extra-uterine placentation was to be found.

As said above the whole mass was enveloped by a thin membrane; this was continuous with a firm fibrous portion lying in the concave edge of the cyst. On removing the embryos they were found separately enveloped by a firm membrane—the amnion. Between this and the outer membrane the flesh-colored substance which apparently represented the ringed placentæ was of variable thickness conforming more or less to the outline of the enclosed fœtuses; its substance had a marked columnar structure suggesting the villi. A large number of crystals, probably cholesterin, were found mingled with this substance.

The fœtuses were distinctly mummified and much distorted. Their skulls were compressed and the cranial bones pushed by one another at their edges. From the condition of the uterine horn, as well as that of the fœtuses, it may be inferred that the accident happened a considerable time before the cat was killed. There is no evidence to show at what stage of gestation it occurred, nor whether they had or had not been extraneous placentation, nor how the two happened to be wrapped so closely in a common envelope. Among the many cats dissected annually this is the first instance of abnormal pregnancy observed.

III. The third case that I would mention is that of a garter-snake, *Eutania sirtalis* in which some of the eggs had developed in the body cavity. More than once dissection of this snake in the spring has revealed young yet in the egg membrane in the oviducts, dead and mummified, which were evidently the product of a previous year. In May last one was found with such wrecks in the body cavity outside the ducts, whilst the ducts were not ruptured as was proven by inflation.

As is generally known, the eggs of this species develop and hatch in the oviducts, and accidents which might easily account for their death before extrusion are easily imagined; harmless mother snakes are so often ruthlessly trodden under feet of men and boys that the young still in the egg envelops may be killed. But how about those found outside the ducts? Were the eggs fertilized before reaching the ducts, and then by some accident failed to enter the same, or were they fertilized in the ducts and by accident forced back into the body cavity? Just where the ophidian eggs are fertilized seems to be in doubt?

FRACTURES.

By Dr. Pierce, Oakland, Cal.

(A paper read before the California State Veterinary Medical Association).

Not knowing what other subject to present to you this evening, I have concluded to give you a report of several

cases of fractures that have occurred in my practice of late. It tends to show to what extent nature will repair damage with a little assistance from man, and that we should not be too hasty in advising the destruction of a poor dumb brute.

CASE I.—On the 20th of March last I was called in great haste to the race track to see a horse that the trainer said had gotten hurt in his stall. Upon arrival I found a most beautiful three-year-old chestnut stallion, a grandson of Direct, standing in one corner of his box with the blood dripping from his mouth.

On examination I found a compound comminuted fracture of the inferior maxilla, beginning between the front and lateral incisors on the left, extending in an oblique direction to the first molar on the right, making a three-cornered piece, and taking with it four incisors. The piece was held by the skin in such a manner that the table surface of the teeth looked forward, and the fractured portion kept piercing the roof of the mouth.

I ordered the animal brought directly to the hospital where we placed him on the operating table, and proceeded to get the parts in apposition. I found it impossible to do so at first on account of the ragged edges, but by removing some of the irregularities with the bone forceps I had no difficulty, and with silver wire made fast the teeth on the broken piece to the solid molars on the opposite side. Then by placing splints under the jaw, and bandaging around through the mouth, I made it quite solid.

The next question was, "How is the horse going to eat all this time?" it being impossible for him to take up a mouthful of food or masticate it after he once had it in his mouth. By boiling oatmeal (having it rather thick), and placing it well back in his mouth with a wooden spoon he managed to get it down, and enough to satisfy him fairly well.

We removed the bandage every day, carefully washing out the wound with an antiseptic, and always keeping a muzzle on except when feeding him or dressing the wound.

In twelve days we could see signs of reunion beginning to

take place and in just thirty-one days he went back to the track, weighing at least one hundred pounds more than when he came to the hospital. Apparently, he was all right except that the piece which was broken was a trifle lower than the rest of the jaw, but to a casual observer it is not noticeable at all, and he has been worked ever since.

CASE II.—On the afternoon of May 6th I was called to one of the largest stables in our city to see a horse that had become lame while being driven that afternoon.

From a history of the case I learned that a very responsible party had been driving the horse, and in crossing the street car track he very suddenly became lame. The driver got out, supposing it to be nothing more than a rock in the foot or that he had picked up a nail, but finding nothing of the kind, got back into the buggy and the horse went off on three legs. Not being far from the stable the driver managed to get him home. When I arrived I found a large sorrel gelding fourteen years old, holding up his right front foot. Upon examinatian I found a longitudinal fracture of the os suffraginis. We placed the animal in slings and had the parts fomented with hot water for an hour or more three times a day and applied anodyne liniments for three days. When the swelling was somewhat reduced, we applied splints and a plaster of paris cast. We left him in the slings six weeks, and when we took him out he threw considerable weight on the fractured leg. We then let him run in a pad dock continuously, where he improved very fast. He has now almost entirely recovered, there being still a slight enlargement of the fetlock joint.

CASE III.—On July 13th I was called to see a colt that the man said had become hurt in some way during the night, and was very lame. Upon arrival I found a bay colt four months old. When he tried to move he would drag his off hind leg, apparently having no control over it whatever. I examined it and found an oblique fracture of the shaft of the femur.

We placed the little fellow in a cart that chanced to be at hand, and brought him to the hospital, where we rigged up a

set of small slings; placing them under him, and fixing it so there could be no weight thrown on the fractured limb, by making a hole in the floor under the foot, arranging it so it was impossible for him to get into it with any of the other feet. Having of course to depend upon the large muscles of the region to keep the two ends in apposition, as it is impossible to bandage in that locality. We left him in the slings three weeks, and when we took him out, to our great surprise, he walked quite readily across the floor. He improved so rapidly, that in five weeks from the time he came to the hospital he walked home, easily, a distance of three miles.

Hoping this may lead to a good discussion, I will close by saying, never order an animal with a broken leg destroyed, if there is any chance of recovery.

SCLEROSTOMA TETRACANTHUM.

By G. L. BUFFINGTON, D.V.M., Mt. Pleasant, Iowa.

(A paper read before the Iowa State Veterinary Medical Association.)

In presenting this paper to the Association I do not wish to convey the idea that I am a specialist in this line of work or that I have made any special scientific investigation of the parasite under consideration. I simply present the subject from a clinical standpoint, as observed in my practice, referring when necessary to some of the standard authors. The literature on this subject being so meagre, the loss occasioned by the parasite so great, it behooves those who have observed its ravages to draw attention to the facts and thus elicit a discussion which may prove of benefit to the profession. It is with this intention I present this paper for your consideration.

For the minute anatomy I am indebted to "Neumann's Parasites and Parasitic Diseases of Domestic Animals."

DESCRIPTION.—The Sclerostoma Tetracanthum is one of the very small nematodes inhabitating the intestines of the horse. The body is slightly tapering anteriorly, of a reddish brown color when preserved in alcohol, but while in the intestinal canal of the host the larger ones are of a bright red

and the smaller ones a dirty white color. They are from one-fourth to three-fourths of an inch long, the females being a little larger than the males. The mouth is circular, with a salient rim that has a crown of triangular teeth, and outwardly six papillæ, two lateral, small, and on each side of them two others, conical and very prominent. The buccal capsule is cylindrical. The caudal pouch of the male is simply excised on the ventral surface.

The posterior lines are trifurcated, the middle doubled and the anterior cleft. In the female the tail terminates in a point and the vulva is very near the anus. The digestive canal is complete.

The sclerostoma tetracanthum inhabits the cæcum and colon of the horse often in company with the strongylus armatus, another troublesome equine parasite and one which formed the subject of an interesting and valuable paper at the last session of the United States Veterinary Medical Association, by Dr. J. F. Winchester.

ROUND OF LIFE.—The ova are segmented in the uterus. They are laid in the intestine of the host, passed out with the fæces, and if the proper conditions, warmth and moisture, are met with, will hatch out in a few days. The external phases in their development are, according to Bailliet, analogous to those of the strongylus armatus and are about as follows: If the conditions of warmth and moisture continue favorable after the ova are hatched out, they gradually grow, their integument becomes folded and forms a kind of sheath in which the worm moults. It is at this period they enter the body of the host in the water the animal drinks, or perhaps on the green forage when on low, damp ground, pass into the intestines, and it is probable that they encyst themselves directly into the mucous membrane of the colon and cæcum without penetrating the circulatory apparatus. At least no wandering parasites of this kind have ever been observed. They remain imbedded beneath the mucous membrane until they attain sexual maturity, when they again enter the intestinal canal to pass the remainder of their lives.

EFFECT ON THE HOST.—As the result of the association

of two organisms with more or less constancy, various modifications of form and function must occur. In some of the lower forms of animal life, where the host is but little higher than the parasite which infests it, the latter sometimes has a mechanical transforming effect on the host without seriously interfering with its function. In the higher animal, however, the effects on the host are more serious and more markedly pathological.

Leuckart distinguishes pathological effects as due either to growth and increase of parasites, to their wanderings within the body or to the very considerable loss of nourishment which a number of parasites of appreciable size necessarily entails. The mechanical effects also are often of a serious nature. Thus parasitic worms by their size or number sometimes close up passages, as blood vessels or the bronchial tubes, often causing fatal results.

According to the old hypothesis, the pathological state of the host was not the result of the parasite, but was the cause, and in fact created them. And in spite of the gradual unravelling of the mysteries of origin and life-history, medical men clung conservatively to the old hypothesis of spontaneous generating. The ingenious experiments of Pasteur have, however, prevailed against all refractory opposition, and peremptorily established the fact that spontaneous generation could not be invoked even for the infinitely small parasites or microbes. So it is not until within the last fifty years, that with the rise of experimental helminthology, medical science shook itself free from superstition and ignorance and devoted close attention to etiology and treatment, culminating in that systematic warfare against all forms of parasitism which now occupies so important a place in medical and veterinary science.

During the winter of '91-'92 my attention was for the first time directed to the serious nature of parasitism and the unwonted loss some of these small animal organisms may cause. No other one disease has caused so much loss, during the past year, among colts in the country in which I reside, as that caused by intestinal parasites, and that mostly by the scleros-

toma tetracanthum, though the large, round worms (acaris megalocephala) have usually been associated with them, as also the armed sclerostoma in some cases. In order to convey to you some conception of the pathological effects of this parasite on the host I will cite some cases that have come under my observation. To one in particnlar I will refer in detail, as it was under my direct care for three months, and I had a good opportunity of observing the cause of the disease.

CASE I.—In the early part of December, 1891, an eighteen-months-old filly was brought to my hospital for treatment. The filly presented an extremely emaciated condition, as though suffering from some exhausting disease. The hair was long, rough and staring; left side of the back covered with scabs, legs swollen, more especially at hocks, which presented great baggy enlargements, mucous membranes pallid, pulse about normal and temperature a little below normal. There was a constant rumbling of bowels. Not being satisfied as to the cause of the extreme emaciation, she was placed in a box-stall to note any further symptoms which might be presented. It was soon observed a mild form of diarrhœa was present and the fæces were very fœtid. The appetite was ravenous and she would drink about as much water as two ordinary work-horses at hard work. When down, was unable to rise without assistance though she would struggle to do so. When assisted to her feet would stand around quietly and eat most of the time. Appeared to suffer none, but was just weak and lifeless. On examining the fæces, a number of bright red worms from three to five-eighths of an inch long were found on the surface of them. Every passage contained them, and they were always found on the surface, never within the contents.

The filly continued to grow weaker for four or five days, when on attempting to raise her one evening, we were unable to do so on account of her perfectly helpless condition. After lying all night and struggling most of the time she could not even raise her head from the ground on the following morning, and her case seemed almost hopeless. However, with the assistance of a sling and two or three men we finally suc-

ceeded in getting her up, and after being supported for a short time was able to stand without much assistance. She seemed to do well enough when kept on her feet, but when allowed to lie down would lie quietly for only an hour or two and then begin to struggle to rise, often injuring herself in the struggles. For this reason she was kept up by the use of the sling most of the time. To expel the worms, which were now regarded as the source of all her trouble, finely pulverized iron sulph. was used for a few days in the ground feed and this followed by an aloetic purge. After purgation began the watery fæces were literally filled with these small worms, most of them of a dirty white color, with some, the largest, a bright red, and various gradations between these two. On close examination, while still warm, they looked to be a moving, writhing mass of living organism; there being thousands of them in a small quantity collected on a shovel; and as they continued to be expelled in this manner for thirty-six hours, it would be impossible to even make an estimate of the vast number that existed in the intestines of this filly. The greater number of these worms were about one-fourth of an inch in length. The bright red ones, which seemed to be the same kind more fully developed, would average about one-half inch in length.

Two or three weeks after the first aloetic purge another was given with about the same results, with the addition of expelling a few of the large, round worms. The filly improved very slowly and could not rise without assistance for two months.

During all the time this case was under my observation her appetite was ravenous, thirst great, coat rough and staring and emaciation extreme, improving, however, a little during the last three or four weeks. Diarrhœa was present most of the time and the fæces were very fœtid. Occasionally the bowels would be normal for a few days and then diarrhœa would supervene, this condition gradually improving until the bowels finally became normal. She continued all the time to pass those red worms on the surface of the fæces. This animal received, besides the vermifuges, vegetable tonics

and an abundance of good, nutritious food. The last month powd. nux vomica only was used, given in the feed. At the end of three months she was taken home, well fed, including a bucket of milk every day which she greedily drank, and after being turned to pasture in the spring soon fattened up and did remarkably well, and now at two and a half years of age weighs nearly twelve hundred pounds. I might add that during the last few weeks, since the beginning of cold weather, she shows symptoms of springhalt. Two or three other colts on the same farm were affected with the same kind of worms, but not so badly.

CASE II.—During the early part of last January was called to see a herd of twelve colts, consisting of yearlings and two-year-olds. They had not been thriving the previous summer and fall, and had been gradually losing flesh, but no particular attention was paid to them until at this time, when they began to be so reduced as to be unable to stand. One had died four or five weeks previous to my visit. Three were down, unable to rise, and pitiable looking objects indeed. Five or six more were greatly emaciated, but could still get around. The remaining two or three appeared lively and well, but were also much reduced in flesh. The three that were down presented about the same symptons as case No. 1. The worst one died a few days later, and at the post mortem, several days after death, I found the whole mucous surface of the colon and cæcum was literally lined with these small worms, sclerostoma tetracanthum. They were very loosely attached by anterior extremity to the mucous membrane. The attachment was, however, very loose, as they could easily be brushed off. I did not find any encysted beneath or within the mucous membrane. They had probably, previous to death of host, all become sexually mature, and passed into the intestinal canal. A portion of the small intestines, five or six feet in length, was filled with the large, round worms (acaris megalocephala). There were two or three hundred of them, and were all matted together, completely filling the canal. They measured from four to twelve inches in length. This colt, though a small one, had, besides harbor-

ing all these worms, been infested with great numbers of lice, previous to death. The other two which were found unable to rise were helped up every morning and well cared for, but, after lingering along several weeks, finally died. The post mortem revealed about the same condition as the first one, except there were only a few of the large, round worms, and in addition a number of white worms, from one-half to two inches long, were found imbedded beneath the parietal layer of the peritoneum. These proved to be the strongylus armatus. These might have existed in the first one and escaped my notice, as I did not look especially for them. Another one of the colts, being very weak, in some manner fell and rolled down an embankment, from the effects of which it died. Post mortem revealed about the same condition as last two. Also found portion of the colon filled with blood clot, probably the result of the fall. The remainder of the herd, with good care, succeeded in getting through the winter, and began to gain as soon as turned to grass. They all received, as medicinal treatment, iron sulph. followed by an aloetic purge, and then the iron sulph. combined with vegetable tonics.

CASE III.—My attention was called to another herd, consisting of ten weanling and one or two yearling colts, which were not thriving, although they received the best of care, being well bred, some of them standard bred. On examining fæces, found they contained the small, red worms. They showed no symptoms of diarrhœa, and were not yet extremely emaciated. They were also affected with lice. The worms were eliminated by the same treatment given the others, and they all recovered. There were many older horses on the same farm, all of which remained free from the parasites.

Numerous other cases of a similar nature were reported from various localities within the county. Although I did not see them all, I was led to believe they were from the same cause.

Dr. G. W. Butler, of Ohio, in *Journal of Comparative Medicine and Veterinary Archives*, Vol. XI, No. 9, also in AMERICAN VETERINARY REVIEW, Vol. XIV, No. 6, refers to this

parasite (sclerostoma tetracanthum) occurring as a coincidence in some horses affected with rabies. On post mortem, he found a great number imbedded in the mucous membrane of the colon and cæcum, as well as a large number free in the intestinal canal. He also, in the same arti cle, quotes a letter received of Dr. T. S. Butler, then of Iowa, in which he refers to the same parasite as existing in a number of horses, one of which, a four-year-old mare, died from their effects, and on post mortem he also found a vast number infesting the mucous membrane, and a careful estimate indicated that there were not less than seventy-five thousand of these parasites infesting the large intestine of this animal, and this notwithstanding that the animal had passed in the fæces, during the two weeks preceding death, an equally large number. In the intestines were also found many of the large, white worms mentioned by Prof. Williams, and measuring from one to two inches in length. Williams also mentions this worm as existing in the mucous membrane. In the same subjects he found others in the intestinal canal, which were from two or three inches long, and he was of the opinion that these were of a different variety. There were none of the white worms found in the intestines of any of those cases examined by me, and, as stated before, I found no worms of any kind encysted in the mucous membrane of the colon or cæcum.

From some experiments performed by Dr. T. S. Butler with these small, red worms, mentioned in the letter referred to above, he succeeded in growing them to double their original length, during which time they lost the red color and became much like the white worms which he found. As the result of this, he was led to believe that probably the white worm was only an advanced stage of the small, red worm.

Colts seem to be more susceptible to the attacks of these worms than older horses. This, perhaps, is due to the fact that the intestinal walls are more delicate and consequently offer less resistance to the burrowing of the parasite in the first stage of its development. In only two instances have I observed these worms in adult horses in any great numbers.

In these two cases there was no emaciation; the only symptoms being those of acute diarrhœa which soon terminated in recovery.

PREVENTION.—Though we may not yet know the precise life-history and mode of introduction of these parasites, yet we are not altogether at the mercy of their invasion. The ova, it is pretty certainly determined, are derived from without, in all probabilities from the water supply or from forage when obtained an low, damp ground. It is evident, then, if a vigorous quarantine can be kept over these supplies, we can expect to keep animals reasonably free from invasion. But as this requires continual patient care, and on many farms difficult to control, it is generally neglected in practice, and the necessity for it comes into notice only after losses have been endured.

The parasite does not always come, however, as the result of faulty hygienic surroundings, as animals may be infested when running in good pasture and drinking from a stream of running water. And yet, after one attack under such circumstances, it would be advisable to remove the animals to a higher or better-drained pasture, and furnish the water supply from a deep well which receives no surface drainage. Iron sulph. mixed with the salt, and given once or twice a week, would prove beneficial in warding off the parasite. If an attack is imminent, the iron should be given more frequently, mixed with ground feed.

TREATMENT.—The indications in the treatment of this form of parasitism is to cause expulsion of the parasite and maintain the strength of the patient by tonics or stimulants, if the animal is greatly debilitated.

Various and numerous are the therapeutical agents used as vermifuges. Arsenious acid, tartar emetic, santonine, male shield fern, empyreumatic oil, have all been used with more or less success. Turpentine is highly lauded by some authorities as an efficient agent in expelling these worms. The treatment proving most satisfactory to me has been iron sulph., given for two or three days in ground feed, and this followed by a dose of aloes sufficient to cause mild purgation,

the dose of course depending on the age and condition of the animal; this again followed by the iron and vegetable tonics, where debility is great. Good, nutritious food in abundanca and pure water are essential, as is also shelter from the extreme cold. After an animal becomes so much emaciated as to be unable to stand, only the most careful nursing will insure recovery.

The geographical distribution of this parasite is not yet known, as so little has been written upon the subject. I am informed by Dr. C. W. Stiles, of the Bureau of Animal Industry, after sending him some specimens of the worms found in Case I, which he pronounced as given above (sclerostoma tetracanthum), that the Bureau has had quite a number of cases of them reported from Minnesota and Illinois. To what extent they exist in Iowa I shall hope to determine from the discussion of this paper.

REPORT OF THE PUBLICATION COMMITTEE.

By W. Horace Hoskins, Chairman.

(Read at the United States Veterinary Medical Association.)

As Chairman of your Publication Committee in offering you this brief report, it comes with an apology that you have not enjoyed the past year a complete reprint of our proceedings at Washington, as you did of the one at Chicago. The unfortunate condition in which you left matters at Washington, though appealed to leave the whole matter of this work in the hands of your Committee, which went unheeded, ended just as might be expected—in untold chaos, unending dissatisfaction—and from that time to this there never has been at any one time in your Committee's hands the entire list of papers, reports, etc. that were read and considered there. Until some three months ago I was only able to get together the large part of this matter, and a publisher's estimate of the cost at that late day of about $250.00 for five hundred copies seemed an unwise expenditure at this time. On the various pretexts and claims, one paper and another were taken away, or failed

to be placed in my keeping so that only a part of our proceedings have ever been published.

For your and our good I beg of you to clothe your Publication Committee with such control of all your proceedings (which become your property the moment they are offered for consideration before your meetings) that all corrections and changes may be made from proof copies, if demanded by the writer, and in this way you can be assured of a complete and prompt issue of your journal of proceedings. I would suggest for your consideration the wisdom of combining this and last year's report under one cover, together with a complete list of all the officers and members since your organization. Allow this only to members and applicants, to all others desiring a copy at the exact cost for printing.

We issued one year ago one thousand programmes for our meeting, for the present gathering some seventeen hundred and fifty were printed, and of this number sixteen hundred have been sent out through the mail.

Some five hundred lists of officers and committees were issued after our Washington meeting, and on January 1st of this year five hundred copies of our lists of officers, committees and members were printed for our use. A copy of each one of these was sent to each member.

During the year I purchased two hundred and fifty copies of the October and November issues of *The Comparative Journal.* To each member not a *Journal* subscriber I sent an October number which contained the stenographer's report. The others were judiciously distributed and have brought us a rich return in new applicants and a revived interest in our society.

Some three hundred and fifty copies of the list of applicants have been issued, and though they were only placed in the printer's hands on the 15th, I have found opportunities of sending out nearly one hundred, particularly to those who did not expect to be with us, that they might scrutinize the list and forward any objections that they deemed best for the welfare of our Association. Our one thousand application blanks are exhausted and will require renewing after this meet-

ing. They might be changed to advantage by printing thereon our rules and by-laws relating to the qualifications of applicants.

The list of veterinarians which I had compiled one year ago, numbering at that time some thirteen hundred, has now reached about twenty-one hundred, scattered over our entire country and can be carried to about three thousand if time would only permit. Most of these names and addresses have been in some way or another verified during the past year and will be of great service during the coming year in measuring our plans and completing the same for our International meeting. They have been arranged alphabetically and as far as possible their college parent investigated This year it was of great service in aiding the work of Assistant Secretaries by furnishing lists of the members of the profession in their respective States. If our now three hundred and fifty members would resolve themselves into committees of one, we could in less than three months make a complete canvass of the members of the profession throughout our whole country.

The expense of this Committee during the coming year will be extraordinary, and I am not sure but that in view of these and a large increase in every other direction, that it would be wise to so clothe your *Comitia Minora* with power to devise ways and means for providing money through our membership to cancel the same. We cannot afford in view of the international character of our next meeting, to limit or restrict the great good it promises for our profession, on the grounds of lack of pecuniary means. With some seven hundred and fifty dollars in the Treasury and a careful estimate of our income during the year we will have about two thousand dollars at our disposal.

It became necessary to procure an issue of our certificates during the year, and I procured two hundred copies, which at the rate new applicants are seeking admission will only last another year.

Many minor matters were placed in print during the past year and some mimeograph work was utilized, all tending to increase our usefulness and promote the welfare of our organization.

EXTRACTS FROM GERMAN PERIODICALS.

By R. Middleton, D.V.S., Philadelphia, Pa.

DIABETES AND FATTY LIVER IN CANIDAE.

An excessively corpulent dog had been for three days apparantly unwell and inactive; from the examination no symptom was discovered which could not be attributed to the obesity. Five months later the same animal was returned, but in a decidedly thinner condition, which despite a continuously good appetite continued to diminish in gross weight. Thirst increased so that at this time, the relatively insignificant patient was consuming from one to one and a half liters of water per night. The act of urination was indulged in, all but continuously, the volition seeming no factor in the occurrence. Since the last eight weeks imperfect sight has overtaken the subject.

Status Praesens.—Pulse 100, but no alteration in the temperature. In the hypochondriac region the abdomen seemed enlarged, and this directly referable to a hypertrophied liver, which extended forward to the seventh rib, causing dullness on percussion. Cataract in each eye, but in the posterior chamber of the organ no change in the refracting media.

The animal was immediately destroyed; autopsy offering slight catarrh of the stomach with very well marked general anæmia. The liver of colossal proportions; fatty, but without pathological change.

Encephalon, kidneys and pancreas unaltered. In the bladder a small portion of urine, which yielded abundant saccharine material.

The case was one of diabetes mellitus. Since 1889 Schindelka has seen but three cases of diabetes mellitus, and two diabetes insipidus.—*Œst. Wissenschaft Ztsch. f. V. K.*

DANGER OF INTERNAL APPLICATIONS OF AMMONIA.

During the past year M. records three cases of ammonia poisoning in the horse. These patients required the admin-

istration of some irritating medicine. The first horse suffered from colic, and died of stomachic rupture; autopsy displayed the lining membrane, and that of the pharynx to have been cauterized by the destructive action of the medicament.

A second animal that had received the same treatment, and which was suffering from indigestion, perished on the twelfth day under the appearance of intense pain.

M. attributes the fatal pneumonia in this case to be the sequelæ of the entrance of the ammonia into the trachea. The general opinion of the conference at which these cases were reiterated, is that aq. ammonia is of questionable aid as an internal remedy in our domestic animals.—*Berl. T. Wochenschrift.*

LOCALIZATION OF HYDROPHOBIA VIRUS.

In several fatal cases of rabies, Wissokowicz experimented with the liquor cerebro-spinalis in regard to its virulence. In each case the result has been negative; on the contrary, every case in which the emulsion of the spinal cord had been inoculated, the animals used in the tests—rabbits—succumbed with symptoms of typical hydrophobia.

The author considers this very tangible evidence that rabies is dependent upon a micro-organism which requires for its propagation conditions and material to be found only along the track of the nerves and in nerve cells.

This, moreover, further elucidates why, in numerous instances, subcutaneous or intravenous injections of preparations of the virus have not induced hydrophobia.—*Centr. fur Bacteriol. u. Parasit. Bct. ix.*

PERFORATION OF THE POSTERIOR VENA CAVA.

The post mortem of a seven-year-old Holland cow that became suddenly ill under symptoms of dyspnœa, and was slaughtered in order that the meat remain eatable, disclosed the following lesions:

In the right lobe of the liver, directly in that locality upon

which the vena cava posterior traces its course, an immense abscess cavity, seven inches in length by three in width; this cavity contained a quantity of inspissated pus. The walls, except that portion adjacent to, and immediately beneath the anterior border of the liver, consisted of a white connective tissue coating, varying in thickness from $\frac{1}{3}$ to $\frac{2}{3}$ of an inch; the component fibers of the latter entered the parenchyma of the organ, extending in an arboreal network. The interior was of a healthy pink color.

An irregular opening more than one-half inch in length, formed the means of communication between the abscess cavity and the lumen of the vena cava.

The sides of the opening were, upon that portion corresponding to the abscess, smooth and rounded; while that portion, formerly the wall of the vein, was irregular and in shreds. Anterior to the rupture jnst described, a portion of the tunica intima of the vena cava, about the size of a quarter dollar, had become loose and formed a pocket, opening backward. The free edge of this valve, as it may be called, was occupied by growths the size of a pin-head, and resembling warts in general appearance. The remaining portion of the vessel's inner coat, adjacent to the foramen, was intensely reddened.

The development of those lesions has occured, in my opinion in the following manner: The primary cause was undoubtedly the abscess; how this originated is impossible to say, though some may advance the theory of an echinococcus, yet no trace of a cyst wall could be detected, and no lesion of this nature could be located in the remaining organs of the cadaver.

From the texture and thickness of the walls of this growth, it is safe to presume that the same had taken a long time to reach its present dimensions. This inflammatory action within the growth very likely extended to the serous membrane covering it, and from there to the vena cava, causing adhesion between the liver capsule and vein; by this hermetic union, the external coat of the latter vessel was obliterated. The suppurative contents now came in contact with the tunica intima, producing thereupon a certain amount of irritation

not unlike an ordinary foreign body, with congestion and maceration at this point.

As a consequential result there followed an inflammatory process, which weakened the now thin separating wall, and permitted an intermingling of contents so sudden and violent in intensity, as to tear the internal coat of the vein, producing the valve-like flat previously spoken of.

Had the rupture and interchange been less rapid, there would have been formed thrombi, which could obviously have caused some manifestation of ill health.

This is the only case of this nature to be found in our literature, and for this reason we have been somewhat elaborate in its description.—*Berl. Th. W.*

KERATITIS MACULOSA IN THE HORSE.

A three-year-old mare, brought to the Vienna clinic on account of blindness, came under the care of Prof. Bayer. He found the morphological appearance of the organs normal; complete absence of swollen lids, photophobia, congestion of the conjunctiva and superfluous secretion; both orbs of the same size. At the side of the cornea, adjacent to the inner canthus of the left eye, a superficial cloudiness could be detected about three mm. in width.

By focal illumination this resolved itself into a number of minute points entirely independent and distinct from each other. They were in the most external strata of the cornea, and also in the subepithelial layer. The contour of the transparent coat at this point was irregular, as shown by the ophthalmoscope. Injection or hyperæmia of the sclerotic not present.

Prof. Bayer had first heard of such a corneal disease under the head of "Keratitis Maculosa" in the *Vienna Weekly Clinic* of 1889; this was described by Prof. von Reuss, and had occurred in a man at the Vienna hospital. Reuss was invited to examine this horse, and gave it as his opinion that the lesions present were precisely the same as in his own patient. The same disease was again seen in Bayer's clinic a short

while after. In this instance nothing abnormal was noticed on the remaining portion of the bulb, the alterations being confined exclusively to the cornea. The opaque collection increased in dimensions in a week, and at the periphery of the transparent coat fine bright stripes appeared and vanished. At the termination of the third week the whiteness on the left cornea had increased one mm., while that upon the right had markedly receded. In one month after the first observation, the right cornea was clear and the left nearly so.

Prof. Bayer has had an opportunity to record three other cases which, he states, manifested the same course and termination. Each of these animals had been brought to the clinic for some disease other than that of the eye, and it was only by accident that the students discovered anything unusual in the organ. One of the patients served as material for a post-mortem. This subject when seen intra-vitam exhibited numerous plane facets in the affected region which were somewhat elevated. The examination of the eyes, undertaken by Croker, exposed a number of round cells in the parenchyma of the cornea; these were scattered in the lamellæ, and as collections occupied the whole thickness of the membrane. Circumscribing the round cells is a ring of purplish stained bodies which might have been micrococci, the cornea being somewhat thicker at the point of invasion. Descement membrane exhibited no alteration. At the termination of the pannus, or collection of sclerotic vessels upon the cornea, were cumulations of round cell which may be alluded to as an invasion of the same. At the limbus corneæ, in the substance of the cornea, masses of decomposed protoplasma; from this point the disease seemed to have propagated itself. —*Mtsch. f. Thierheilk. v. F. and K. III.* 3.

CHRONIC GLANDERS IN MAN.

A nineteen-year-old lad employed as a hostler reported sick under symptoms of an irregular fever, general weakness, intermittent pain in the extermities, chills and nocturnal sweats. Dr. Jakowski's examination determined, besides swelling of

the spleen, an enlargement over the upper third of the femur, not painful; upon the calf of the leg a small, deep ulceration with callous circumscribing lips and infiltrated surroundings. The left testicle swollen, and the epididymis painful on pressure. After the lapse of a few days these symptoms decreased, but their demise was marked by the appearance of chills and a pustular affection of the skin. From the contents of the latter the author succeeded in cultivating the staphylococcus. Accompanied by intense pain, there formed in the region of the shoulder an enlargement about one inch square. Trial puncture by the trocar yielded a few drops of a bloody serous fluid which contained the glanders bacillus. Similar infiltrations developed themselves upon the forearm and the upper thigh. The malignant symptoms vanished by the internal application of iodoform. A relapse occurred two or three months later which involved the left testicle and the calf of the leg. Upon the former an aggregation of bluish granulations formed under the skin, which came ultimately to puncture, and then discharged a tenacious, thready suppurative product in which the glanders bacillus was easily discovered. The wound following the extirpation of the testicle healed kindly, and the other symptoms incident to the second and recurrent attack disappeared.—*Ztschr. f. Klin. Med.*

ALUMINIUM SHOES.

Trials at the Berlin military smithy upon aluminium have decided the following interesting points: Pure aluminium may be manipulated when cold, but with more difficulty than iron at a glowing heat. The metal becomes more dense and harder from even light blows; through the operation of grooving and piercing, the form of the shoe is destroyed, necessitating re-hammering into shape. By ordinary use a shoeing lasts about three weeks, but the lower external edge may need filing before the shoes are worn out. The softness of the metal, and the consequent rapid loss or wearing of the shoes, makes the asphalt pavement desirable.

Aluminium is three and one-half times lighter than iron, a

medium-sized shoe weighing seven ounces. Sufficient of the element to form two shoes costs seventy-five cents, while the same amount of iron costs ten cents. Shoes made of this metal are recommended for track-horses. Aluminium bronze is cheaper, but difficulty is experienced in working the same. Aluminium copper is as heavy as iron.—*Ztschr. f. Vet. K.*

THERAPEUTIC NOTICES.

Ahl states that the antiseptic property of corrosive sublimate solution is increased when the same is of a certain warmth. For instance, a solution of 1:10000 at a temperature of 104° is as effective as a 1:500 at ordinary temperature.—*B. T. W.*

Turazza commends the administration of asafœtida in habitual abortus.—*Much. Med. Woch.*

Abatkoff claims that opium, morphium and codein hinder the digestive process, and should not be given for some time after feeding.—*Dtsch. Med. Woch.*

In the treatment of moist eczema Leven advances the application of a one per cent. argent. nit. solution several times daily.—*Therp. Monat.*

Congis has used the following liniment as a local application in mammitis of the cow:

℞
Liniment Amm., ℥ v,
Camph. Trit., ʒ vi,
M.

Another is given in which the quantity of ammonia is influenced by the intensity of the inflammation:

℞
Ol. Camphorat, ℥ v,
Liq. Amm. Caust., ℥ iij v,
M.

Christmas and Restpant offer a mixture of antiseptic agents, which is in no way injurious to the organism, and at the same time very effective. Its composition is as follows:

℞

Ac. Carbolici, ʒij,
Ac. Salicylici, ℈xv,
Ol. Menth. Pip., glls. x.,
M.

A half per cent. watery solution of this liquid will destroy the bacteria of diphtheria in thirty seconds; anthrax bacilli are annihilated by a two per cent. solution.

SHORT COMMUNICATIONS.

In the pathological institute of the Berlin veterinary college, Dr. Wallach has discovered leaf-shaped bodies and distoma eggs in the lungs of equidæ. He advances the suggestion, therefore, that the nodular bodies found especially in old horses at death are but the remains, in many instances, of a previous distoma infection.—*Berlin. Wochen.*

Feigel reports the following for the determination of human and animal blood by the agency of bile. When gall is added to pulverized blood, the crystals formed from the human fluid assume the form of lengthened cylinders or columns; those obtained by treating animal blood are angular four and eight-sided prisms.—*Oestor. ungar. Centralb.*

According to Dr. Nattall, every consumptive expectorates from 250,000 to 4,000,000 tubercle bacilli in twenty-four hours. Supposing the number of phthisical patients in Berlin to be 50,000 it is easily comprehensible that the hygienist should be aroused to the menace offered by these 100,000,000,000 microbes daily brought into contact with the outer world. In this calculation the spores, which are still more numerous, are left entirely out of consideration.—*Deutsch. Med. Wochenschr.*

A new stable morphine solution (1:30) is made as follows: Take of morph. hydrochl. ʒj, dissolve in ʒv of alcohol, ʒx glycerinum, and water sufficient to make up to ʒxxx, after to be filtered. It is asserted of this compound that it will remain intact for months.—*Rundsch. f. Pharmac.*

SOCIETY MEETINGS.

MASSACHUSETTS VETERINARY ASSOCIATION.

Regular meeting of the Massachusetts Veterinary Association held at 19 Boylston Place, Boston, Wednesday evening, October 26th, 1892, at 7.30 o'clock. President L. H. Howard in the chair.

Members present: Drs. Bryden, Blackwood, Burr, Hadcock, Howard, Marshall, Osgood, Winchester, Winslow, Parker, LaBaw, Stinson, and the Secretary. Honorary member: Dr. Stickney. Visitors: Messrs. Cronin and Dowd, students at the Harvard Veterinary School.

Records of a regular June meeting, and a special meeting held in September read and accepted.

Unfinished business, none.

Reports of committees: Dr. Winchester reported for the committee appointed to arrange for entertaining the United States Veterinary Medical Association during its meeting in Boston last September. Moved by Dr. Osgood and seconded by Dr. Blackwood that the report be accepted. Carried.

Moved by Dr. Osgood, seconded by Dr. Blackwood, that the surplus from the entertainment fund be paid into the Association's treasury. Carried.

Admission of members: Names of Drs. E. P. McKenna and Wilbert Soule balloted upon. Twelve votes cast for each, all in the affirmative. They were therefore elected.

Application for membership: The application and credentials of W. M. Balmer, M.D.V. (Harv.), were reported favorably upon by the Executive Committee. Dr. Balmer's name is laid on the table for a month under the rules.

New business: Dr. Winchester called the attention of members of the Association to the first annual announcement of the "National Veterinary School" in Washington, many members of the faculty being veterinarians who are either members of the United States Veterinary Medical Association, or connected with the United States Bureau of Animal Industry, or both. He also called the attention of the mem-

bers of the Association to the new requirements adopted by the United States Veterinary Medical Association at its last meeting in Boston, that hereafter that Association admits to membership only graduates of schools giving a three years' graded course of instruction.

The amendment to the United States Veterinary Medical Association constitution was adopted unanimously, that is, there was not a dissenting vote, and silence gives assent, and yet there were men sitting in the hall who had the announcement of the new school in their pockets, and yet did not say a word. Dr. Winchester thinks it one of the most slanderous affairs ever thrown in the face of our profession, and although it may do no good to say anything, yet silence is acknowledgement, and it is our duty to decry this institution. We ought to act to-night; we ought to show our disapprobation to the proper United States authorities, and we ought also to publicly censure the officials of the Bureau of Animal Industry for their participation in the matter. Dr. Winchester then read the resolutions of the Philadelphia Veterinary Society at its meeting September 27th. These resolutions cover the ground pretty well, but they might have been more emphatic. He also read Dr. Cooper Curtice's open letter to Hon. Jerry Rusk. Dr. Winchester thinks that we, as an Association, ought to make our protest on the same basis as the Philadelphia resolutions and Dr. Curtice's letter. Futhermore, as citizens of the United States, voters, and taxpayers, as well as members of this Association, we have a right to object to public officials using their positions in such a way.

Moved by Dr. Parker that the Chair appoint a committee of three to draw resolutions protesting against the formation of a "national" school with a two years' course, particularly after its founders had placed themselves on record as favoring a three years' graded course of study.

Dr. Peters amends the motion that the committee memorialize Hon. Jerry Rusk, and also draw resolutions censuring the action of the Bureau of Animal Industry, wherein their course is reprehensible as public officials. Seconded by Dr. Winchester. Accepted by Dr. Parker.

Dr. Bryden thinks we ought to memorialize the faculty of this school, and not attack them in an arbitrary way. We ought to do it kindly and harmoniously.

Dr. Howard thinks that other schools have been started with a two years' course, and have had officials of the Bureau of Animal Industry as teachers, and our course must be consistent. Motion then put and carried without a dissenting voice.

Dr. Howard then said that our course must be consistent, and what we send must be something nobody can go behind. He then appointed Drs. Parker, Bryden and Peters on the committee. All refuse to accept.

President Howard then appointed Drs. Parker, Bryden and Winchester as a committee.

Motion then made by Dr. Peters that the committee report at the next meeting. Seconded by Dr. Winslow. Carried.

Reports of cases: Dr. Winslow, of Rockland, has procured a case of springhalt which is now at the Harvard Veterinary Hospital where members can see him. He was to have been brought down town for the members of the Association to see to-night, but he has become incapacitated in some way and could not come.

Dr. Bryden reported having examined him to see if it was worth while to attempt treating him. He says the horse's hocks are deformed; he is old, and his reparative powers are well gone, and he doubts if treatment will do any good, but is willing to try.

Dr. Winslow first saw the animal two weeks ago. He does not show well-marked signs of springhalt when quiet, but if started up suddenly for a little way, then stopped for a moment, and then started again, he shows it in one leg almost as much as the old black horse that the Association killed a year ago last July.

Dr. Howard then read a letter from Mr. T. L. Bolton of Clark University, in which he, among other things, said he was willing to investigate this case as he did the last one.

Dr. Bryden reports a conversation he had with a profes-

sor* at the Harvard Medical School. He told the professor that he thought that springhalt was due to a peripheral disturbance, and that they did not agree with him at Clark University. The professor told Dr. Bryden that changes in the spinal cord such as he described were not infrequently met with in various affection in the human, such as elephantiasis, schleroderma, lupus, etc.

Dr. Howard says Dr. Winslow gives the Association this horse; he is our property, and we shall insist that a full report of the investigation of the case first appears in the veterinary journals.

Dr. Bryden says it is not a good case to treat, and Dr. Osgood agrees that it may not be.

Dr. Howard thinks that the foot is not as much contracted as the little black's was.

Motion made by Dr. Winchester that we accept the horse, and are glad to keep him at the Harvard Veterinary School for a while, and that Mr. Bolton be invited to come and experiment with him. Seconded by Dr. Blackwood. Carried.

Motion made by Dr. Osgood that we give Dr. Winslow a vote of thanks for the horse, and credit him on the Association's book with a sum equal to the expense he has gone to in the matter. Seconded by Dr. Winchester. Carried.

Dr. Bryden showed two very large ergots from back of the fetlocks of a grey horse. In his opinion the horn here developed in excess on account of the feet being imperfectly nourished.

Dr. Winchester showed a specimen of aneurism in a branch of the anterior mesenteric artery due to the strongylus armatus. This artery contained a chain of thrombi due to this cause, and free strongyles were formed in the posterior aorta. The animal from which the specimens were obtained was a mare about twenty years old, from which several fast colts have been raised. Dr. Winchester had known her for nine or ten years. Several years ago she was in poor flesh while breeding, and had to be given twelve or sixteen

*The professor's name withheld at Dr. Bryden's request.

quarts of oats daily to keep her in condition. Her powers of assimilation did not seem to be what they should. Last summer she was at Lowell with a sucking foal. The owner started to take her to Haverhill, but she only went as far as Lawrence when she was taken sick, and was finally destroyed. Principal symptom loss of power in hind legs, also had hæmaturea at first, but recovered from this condition before being killed. The only abnormality other than those already described upon post-mortem was a serous cyst on the outside of one kidney. Dr. Winchester never knew of this mare having colic, but she evidently did have loss of nutrition.

Dr. Peters showed a small tumor removed from a horse's breast, which proved to be a dermoid cyst containing hairs and what appeared to be broken down epithelial cells when it was cut open.

Dr. Howard reported a case of scrotal hernia in a gelding. The animal was a bay gelding, six years old, driven every day since his arrival in the city twelve days previously. No history of previous trouble of any kind. On the seventh day the driver thought he was driving a stallion, because of an enlargement noticed by him in the inguinal region. After noticing the swelling, he was driven five miles farther, and upon returning home the animal laid down and was quiet for three hours. At the end of that time slight pain was noticed, and a veterinarian called. He made a diagnosis of hernia, and applied a truss made of a piece of blanket, and a favorable prognosis was given. Dr. Howard was called fifteen hours later, found a swelling the size of a peck basket, constant pain, animal pulseless, vacant stare, temperature 102½. Advised his destruction. Post-mortem showed seven feet of intestine passed through the inguinal ring strangulated.

Dr. LeBaw remembered seeing a case of scrotal hernia in a gelding in New York.

Dr. Osgood once saw a three-year-old colt with a scrotal hernia four months after castration. He threw the colt, reduced the hernia, applied clamps to the scrotum, and the animal made a complete recovery.

Dr. Parker reported a case of pneumo-enteritis in a horse,

the urine being so thick and sticky that it could hardly be voided. It shows no albumen, but contains an excess of salts.

Dr. Bryden said that after the outbreak of so-called spinal meningitis in 1873, the urine was in this condition.

Dr. Parker says his case is improving on dilute hydrochloric acid.

Meeting then adjourned.

AUSTIN PETERS, *Sec'y*,

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The tenth Annual Meeting of the Illinois State Veterinary Medical Association was held at the Sherman House, Chicago, Ill., Nov. 16, '92, President S. S. Baker in the Chair.

The roll being called the following members responded to their names: Drs. Walter Allen, A. G. Alverson, A. H. Baker, S. S. Baker, W. A. Baker, Jas. Bond, G. Z. Barnes, H. E. Delavergne, T. J. Gunning, J. A. Judson, O. J. Lanigan, J. T. Nattres, C. A. Pierce, Jno. Scott, J. S. Spangler, R. J. Withers, M. Wilson, R. G. Walker.

The minutes of the previous meeting were read and approved. The President then delivered his annual address.

It was moved by Dr. Barnes, seconded by Dr. Nattres, that the Chair appoint a committee of three to draw up a report of sympathy and condolence on the death of Dr. C. S. Green, of Richmond, Ill., and report at the next session. Motion carried. The Chair appointed as such committee Drs. Alverson, Barnes and Nattres.

The Treasurer's report showed a balance on hand of $40.32. Report of committee on fee bill was deferred till next session. The President then called on Dr. Allen for his paper on "A few things I want to know." Discussion was closed on motion.

J. H. Bates, M.D., of Neponset, Ill., being unavoidably absent, but having sent his paper on "Shall we know each other better," the Secretary was called upon to read it.

Dr. Wilson taking the Chair, Dr. Baker read his paper on "Antiseptic Surgery." Discussion was closed on motion.

The following gentlemen's names were proposed for membership: Dr. J. W. Kaull, Chi. 90, Chicago, Ill.; Dr. J. L. Siegrosser, Chi. 90, Chicago, Ill.; Dr. G. W. Pope, Chi. 89, Dr. J. G. Fish, Chi. 92, Chicago, Ill.; Dr. G. S. Baker, Mont. Chicago, Ill.; Dr. Chas. Spielman, Chi. 88, Chicago, Ill.; Dr. G. W. Browning, N. Y. 92, LincolnIll.

On motion of Dr. Scott, seconded by Dr. Walker, the rules were suspended for the time being and the above named gentlemen elected by acclamation.

Bills to the amount of $22.40 were audited and ordered paid.

The motion to adjourn until next morning at ten o'clock was carried.

Meeting called to order by President Baker.

Committee on Fee Bill reported through its chairman, Dr. Nattres. On motion of Dr. Wilson, seconded by Dr. Alverson, the report of the committee was adopted and the committee discharged.

The Committee on Legislation, reported through its chairman, Dr. Walker. On motion of Dr. Scott, seconded by Dr. Gunning, the report of the committee was adopted and the committee discharged.

The Committee on Membership, through its chairman, Dr. Alverson, reported a number of new members admitted, and new applicants for membership.

On motion of Dr. Scott, seconded by Dr. Gunning the report of the committee was adopted and the committee discharged.

Dr. Hollingsworth, being absent, the Secretary read his paper on the report of two rare cases.

The President then called on Dr. Nattres for his paper on "Azoturia." The usual lengthy discussion on this disease followed, which was closed on motion.

Dr. Walker then read his paper on "Veterinary Legislation," and was followed by J. A. McDonell, M.D., on "Foot and Mouth Disease in Man and Animals."

Dr. W. L. Williams, of Purdue University, of LaFayette,

Ind., President of the United States Veterinary Medical Association, was then called upon and spoke regarding the International Congress of Veterinary Surgeons to be held in Chicago in 1893, and was followed by Professors A. H. Baker and R. J. Withers, of the Chicago Veterinary College, on the same subject.

The following gentlemen's names were proposed for membership: Dr. V. E. Frizell, Chi. 92, LaMoille, Ill.; Dr. J. Henderson, Chi. 92, Chicago, Ill.; Dr. J. Fabian Mager, Mont., Chicago, Ill.; Dr. W. S. Brayton, Chi. 87, Blue Island, Ill.

On motion of Dr. Walker, seconded by Dr. Scott, the rules were suspended for the time being, and the above named gentlemen were elected by acclamation.

Election of officers was the next order of business and resulted as follows: President, Dr. S. S. Baker; Vice-President, Dr. Jno. Scott; Secretary, Dr. Wilson; Treasurer, Dr. A. G. Alverson; Board of Censors: Drs. Walker, Gunning and Brayton.

The following standing committees were appointed: Committee on Programme: Dr. S. S. Baker, ex-officio; Dr. M. Wilson, Dr. Stringer, Dr. Nattres, Dr. Ditewig.

Committee on Arrangements: Dr. John Scott, ex-officio, Dr. Frizell, Dr. Story.

Committee on Legislation: Dr. S. S. Baker, Dr. Walker, Dr. Lanigan, Dr. Nattres, Dr. Alverson, Dr. Wilson, Dr. Spielman, Dr. Ryan.

Committee on Membership: Dr. Bond, Dr. Pierce, Dr. Hollingsworth, Dr. Kaull, Dr. Whitmore.

Committee on International Entertainment: Dr. S. S. Baker, Dr. Jno. Scott, Dr. Walker, Dr. Gunning, Dr. Wilson, Dr. Alverson, Dr. Withers, Dr. A. H. Baker, Dr. J. F. Ryan, Dr. Hughes, Dr. Allen, Dr. Hollingsworth, Dr. Nattres, Dr. Pope, Dr. Barnes, Dr. Melvin, Dr. G. W. Pope.

It was moved by Dr. Walker, seconded by Dr. Scott, that the committee have full power to act. Carried.

It was moved by Dr. Scott, seconded by Dr. Walker, that a special assessment of $5 per member be levied for the entertaining of the International Congress. Carried.

It was moved by Dr. Spielman, seconded by Dr. Nattres, that a special assessment of $5 per member be levied for the purpose of legislation. Carried.

It was moved by Dr. Walker, seconded by Dr. Scott, that we have two hundred and fifty copies of the constitution and by-laws printed and distributed to the members. Carried.

It was moved by Dr. Gunning, seconed by Dr. Allen, that a form of certificate of membership of the Association be drafted and presented at the next meeting. Carried.

The Committee on Resolutions of Sympathy and Condolence on the death of C. S. Green, then reported through its chairman, Dr. Alverson. The report was adopted and the committee discharged.

The meeting adjourned to meet in Peoria, Ill., next February, at the call of the Chair.

MATTHEW WILSON, M.R.C.V.S., *Rec. Secy.*

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

FIRST DAY.

The fifth Annual Meeting of the Iowa State Veterinary Medical Asssociation was called to order in the Phoenix club room, at Marshalltown, Iowa, by Dr. F. H. P. Edwards, Vice-President.

Members present, Drs. Edwards, Chatterton, Starkey, H. Shipley, L. N. Shipley, Derwent, Brown, Stalker, Reynolds, Niles, E. E. Sayers, Stewart and Green.

Guests: Drs. H. M. Replogle and J. A. Replogle, of Centerville, E. K. Paine, of Indianola, W. R. Cooper, of Quasqueton, and T. A. Shipley, of Dubuque.

The minutes of the last meeting were read and approved. Drs. Derwent and H. Shipley were appointed a committee to examine the treasurer's accounts.

Drs. Brown, Starkey and Buffington were appointed to fill vacancies in the Board of Censors.

The remainder of the morning hour was taken with verbal reports of interesting cases in practice.

At 1 P. M. the members gathered at the hospital of Dr. Derwent, where several clinical cases of special interest were examined.

AFTERNOON SESSION.

2 P. M. The Association was called to order, Dr. Edwards in the chair. Letters and telegrams received from absent members, expressing regrets for non-attendance were read, also a letter from Dr. W. L. Williams, President of the United States Veterinary Medical Association, inviting this Association to take an active interest in the International Meeting of the United States Veterinary Medical Association, to be held in Chicago next September.

President M. E. Johnson, being unavoidably absent, sent his address, which was read by the Secretary.

Prof. M. Stalker presented the following report for the Committee on Legislation.

GENTLEMEN: Your committee to whom was referred the matter of procuring legislative regulation of veterinary titles in this State, present the following report: The committee met at the Savery House, DesMoines, after the convening of the legislature, and after careful deliberation formulated a bill which in their judgment would meet the wishes of this organization. The bill was introduced in the Senate, and referred to the Committe on Medicine and Surgery. This committee accorded a respectful hearing to your members who had the matter in charge, and the necessity for such legislation was argued in their presence. Some members of your committee met with the Senate committee a number of times to present our cause. After deliberation on the subject, the Senate agreed on some modifications of the bill, and finally reported to the Senate a substitute, embodying such radical changes as in the judgment of your committee rendered the bill worse than useless to the veterinary profession of the State, in the event of such bill becoming a law. All efforts to have the objectionable portions of the amended bill stricken out, failed, and the Senator having the bill in charge was advised to not call up the bill for passage, and it was thus allowed to die.

The point of difference between your committee and the Senate committee, was on the question of granting certificates on the grounds of practice, the Senate committee insisting on providing for a third class certificate to all that class who have been in practice for five years preceding the passage of the act. Your committee objected to this feature of the bill, and preferred to have the bill fail rather than pass with this provision.

A copy of our bill with the amended Senate bill is herewith presented.

M. STALKER.
JNO. E. BROWN.

On motion, a vote of thanks was tendered the committee for the faithful service rendered during the past year, and the committee was continued another year.

The report of Committee on Collective Statistics was then submitted by Dr. Edwards, as follows:

GENTLEMEN: Your committee is sorry to have to report a lack of interest displayed by the members of this Association in this line of research, as the following will prove; one thousand, seven hundred and seventy-five blanks were sent out to sixty-seven members; fifty-seven were returned filled out; these were collected by five members; of these, thirty-three were collected by one member, leaving a balance of twenty-four for the remaining faithful four to share. In reply to a circular sent out, calling in blanks so that a report could be prepared, nine members out of sixty-seven replied.

We can, however, congratulate ourselves that the few notes received are of great value, inasmuch as they nearly all contain a positive history.

Of the notes received, sixteen were cases of spavin, eleven ringbone, twelve specific ophthalmia, nine kicking and one balkiness.

Of the spavins there were seven males and nine females; in color there were five blacks, four bays, three greys, two sorrels and one chestnut. In one the history is not given; in ten the sires and dams were sound; in three cases other offspring of the

same sire were similarly affected; of the dam, one; in the latter case the dam's sire had a spavin, thus making the history of heredity in this case interesting.

The age of development in one case is not given; in one during the fourth month (this animal is now a weanling and spavin is well developed), in one at ten months, one at one year, two at two years, three at four years (the sire of one of these was perfectly sound, but possessed a bad formation of hock; his colts inheredited this formation, and many were known to be spavined in breaking); three developed at five years old, two at six years (one of these had a rather badly formed hock, but stayed sound doing very heavy work till six years old, then threw out a spavin while at pasture; he is now seven years old); one developed it at seven years, and one at eleven years old; this has been repeatedly blistered and fired, but the animal is still lame.

In four cases, breed was not given, eight were grade Normans, two were thoroughbreds, one grade Belgium and one roadster.

Of the eleven ringbones, seven were males and four females; in color four were bays, two each brown, sorrel and iron grey, and one dun; in four, breed is not given; four were grade percherons, one pony, one Hambletonian and one standard bred. In two the age of development is not given; in two, it developed at six years, in one at twenty-five months, and one each at the ages of three, five, nine, eleven, fourteen and sixteen years.

In five cases the sires and dams were sound, in four not known; in one both sire and dam were similarly afflicted; the only case where grandparents could be traced was in the case of standard fillies, and both were free from ringbone. In one case the subject transmitted it to two of her colts.

Of those afflicted with specific ophthalmia, one was a stallion, four were geldings and six were females; in color four were bays, two each greys, sorrels and chestnuts, and one brown; in breed eight were grade Normans, three trotting, and one grade draft. The age of development varied from the ninth month to the eighth year, but seemed most common between the ages of two and four years.

In four cases both sires and dams were sound, in two cases

the dams were afflicted and in two cases the sires; in one case both sire and dam were afflicted; in one case each grandam and grandsire were so afflicted. In two cases several other offspring of same sire were similarly afflicted.

The remarks in these cases are very interesting; in the case of the stallion (he is by Henry Gilbert) one of his colts was foaled blind, one other went blind as a yearling, and many others at different ages.

In the case developed at five years old it appears to have skipped one generation and appeared in the next; as the grandsire was afflicted, but the sire and dam were sound.

In the case that developed at six years old, the subject (a female) has raised four colts, the eldest of which went blind at four years old, and the other three have small, sunken eyes. The observer remarks that he thinks they will all go blind with age. In the case that developed at nine months the remarks say that mother was blind for four days with pink-eye when nine months old.

One observer remarks that he has seen in the past year probably thirty or forty cases of ophthalmia not traceable to heredity, but many following attacks of pink-eye.

Of the kickers, in sex five were males and four females; in color four were bays, four sorrels and one black; in four the breed is not given, the remaining five all being grade Normans. The age of development in one is not given, in five it was developed from foaling, and in three during the third year. In no case were sire and dam both free from the habit; in six cases dam had habit, and in one the sire; in one case both sire and dam had habit; in one case grandam had the habit, and in another both grandam and great-grandam.

The remarks in these cases are not only interesting, but positively amusing in the case of one that developed the habit at three years old, the subject, a female, produced seven colts that were kickers. They would acquire the habit without the dam teaching them. Eight of the cases of kicking recorded were related, and observer's remarks are as follows:

"These animals, although kept hard at work on a farm, be-

came vicious and would kick. These animals all seem deficient in the osseous development of the head, especially the zygomatic processes; animals were well formed, but all presented a peculiarly small and ill-set eye, which was nevertheless very keen of sight, thus making the vice doubly mean, as they would not only kick at you, but probably hit you every time. The remarks continued to say that for four generations these horses have been vicious, and all except one remain the property of the same man. Human nature is very strange. Too generations of kickers, and good shots at that, would be enough for the average mortal, and we all exclaim, why didn't he get rid of them? No doubt he went on the theory that "its a long lane that has no turn," and his perseverance was finally rewarded, for the remarks say that in the fourth generation a colt was foaled that was a prodigal.

Of the cribbers the sex was equally divided, three being male and three females; in color, two were bays, and one each black, white, brown and grey. The age of development in one case was as early as the second month, three at four years, one at five and one as late as twelfth. In three cases dam had same habit. Observer remarks that in one case incisor teeth were close together, but an operation resulted in no benefit.

In another case observer is of opinion that colts acquire habit more by imitation than heredity, as when colts were taken from dam's side when young they became free from habit.

In the case that developed at twelve years old observer remarks no assignable cause; animal has thrived poorly for past fifteen months.

In the case of balkiness the subject was a bay mare. She produced three colts, all by different sires; all showed balkiness, especially after standing a day or so.

Your committee, in conclusion, wishes to remark that although a sire or dam may be perfectly sound, if they have a bad formation of joint, their progeny are likely to inherit said formation, and under proper, or, rather, improper conditions, develop unsoundness. This is a point breeders should look well to.

And we would rather breed to a sire with a good flat hock, that under extraordinary strain had thrown out a spavin, than to

one that had a hock that didn't suit us, but had not been put to the test, and had, therefore, remained sound; and our observation, limited though it be, has led us to the conclusion that it is the conformation that is to be looked for, as much, if not more, than the bony enlargement.

Are horses with round, short, weak, fleshy, though technically sound hocks, that can scarcely carry the carcass of a lumbering fat horse, to be passed sound, whilst those with long, bony, ragged, and it may be, uneven hocks, that are flexed and extended with freedom and power, and which you know from experience will stand the most severe tests of physical exertion, to be rejected?

We also express a wish that the committee of next year will have better help from the members individually than the committee about to retire has had. We ought all to remember that according to the rules of our Association it was constituted for the purpose of advancing veterinary science in general.

The advancement of the science necessitates that the individuals who practice the science should be themselves advancing. There is no time for retrogression, and the Society must not stand still in regard to notes on heredity.

DISCUSSION.

Dr. Shipley thought many of the members did not clearly understand just what was required to properly fill out the blank notes on heredity, else more reports would have been received. He reported the development of laminitis in three successive generations as follows:

A mare contracted laminitis as the result of a hard drive; the disease became chronic. The mare was bred and dropped a mare foal. This animal developed chronic laminitis when five years old, without apparent cause. An eighteen-months-old colt from the latter mare has developed chronic laminitis without apparent cause.

Dr. Edwards said he had seen similar cases.

Dr. Brown had seen many cases of ophthalmia, apparently specific, which he thought were sequels of influenza.

Dr. Derwent: I have met with quite a number of cases of ophthalmia which developed directly after convalescence from influenza, and am convinced that influenza is an exciting cause of the eye trouble.

Prof. Stalker thinks that dark stalls are an exciting cause of this disease of the eye, and related several cases in substantiation of this theory.

Dr. Edwards: I am of the opinion that a corn-grain diet predisposes to or is the exciting cause of ophthalmia. I find that nearly all of my cases are in horses which are grained with corn exclusively.

The Board of Censors reported favorably on the following-named applicants for membership:

H. M. Replogle, J. A. Replogle, W. R. Cooper, E. K. Paine, T. A. Shipley, S. H. Bauman, Davis Coffee, and N. Sorenseen.

Moved by Dr. H. Shipley, seconded by Dr. Starkey, that the Secretary be directed to cast the ballot of the Association for the applicants for membership. Carried.

Moved by Dr. Brown, seconded by Dr. Stewart, that the President appoint a committee of three as a Committee of Arrangements for this Association, to co-operate with the committee of arrangements of the United States Veterinary Medical Association and committees of other State associations for the Chicago meeting, and that this committee be given full authority to act for this Association. Carried.

EVENING SESSION.

Association called to order at 7:30 P. M. by Dr. Edwards.

Dr. W. R. Cooper read a paper entitled "A Study of Septic Germs," which gave rise to considerable discussion,* and was followed by Dr. L. W. Shipley, who presented a paper on "The Congestion of the Liver."

The Association adjourned to the sumptuous banquet, which was much enjoyed by the members present.

SECOND DAY.

Association called to order by Dr. Edwards at 10 A. M.

*This will be published in our next issue.

Dr. G. L. Buffington read his paper on "The Sclerostoma Tetracanthum," which was followed by a general discussion.

Dr. M. H. Raynolds read a paper entitled "Fistula." The paper discussed quite fully the anatomy of the parts involved, with special reference to surgical operations for its cure. It dwelt upon the latest theories relative to the development of pyogenic abscesses as applied to fistula and poll evil. Advocated bottom drainage by means of a seton and cited several cases illustrating this method of treatment.

This paper elicited a general discussion by all the members present.

Dr. W. B. Niles read a paper on "The Use of Disinfectants in Veterinary Practice," which was quite fully discussed by all.

Dr. J. A. Replogle read a paper entitled, "A Study of Carbolic Acid as a Disinfectant," which was not discussed owing to lack of time.

A paper, "Experiments With Lysol," was read by title.

After the election of officers, with appointments of the various committees, the meeting adjourned.

S. STEWART, *Secretary.*

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

We have received notice and a kind invitation to attend the next meeting of the Society, which is to be held on the 12th of January, 1893, with request to notify all the members of the profession in the State of New York, and invite them to be present. We are informed that important papers are to be read and discussed, and also a revision of the by-laws and constitution.

For further information, inquiries can be made of Dr. N. P. Hinckley, Secretary, Buffalo, N. Y.

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